Course Designators
In conjunction with course numbers, departments and programs are identified by a 2-, 3-, or 4-letter designator prefix (e.g., CE for Civil Engineering, POL for Political Science, ECON for Economics). When no designator precedes the number of a course listed as a prerequisite, that prerequisite course is in the same department as the course being described.

Course Numbers
- 0xxx...Courses that do not carry credit toward any University degree.
- 1xxx...Courses primarily for undergraduate students in their first year of study.
- 2xxx...Courses primarily for undergraduate students in their second year of study.
- 3xxx...Courses primarily for undergraduate students in their third year of study.
- 4xxx...Courses primarily for undergraduate students in their fourth year of study; graduate students may enroll in such courses for degree credit. 4xxx courses can be counted for a Graduate School degree if the course is taught by a member of the graduate faculty or an individual appointed to Limited Teaching Status (LTS).
- 5xxx...Courses primarily for graduate students; undergraduate students in their third or fourth year may enroll in such courses.

Course Symbols
The following symbols are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.
- = Credit will not be granted if credit has been received for the course listed after this symbol.
- & Concurrent registration is required (or allowed) in the course listed after this symbol.
- # Approval of the instructor is required for registration.
- % Approval of the department offering the course is required for registration.
- @ Approval of the college offering the course is required for registration.
- **In prerequisite listings, comma means “and.”
- 1-4 cr [max 6]. The course can be taken for 1 to 4 credits and may be repeated for up to 6 credits.

Abbreviations
The following abbreviations are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.
- Prereq...Course prerequisites.
- cr...Credit.
- div...Division.
- DUS...Director of undergraduate studies.
- equiv...Equivalent.
- fr, soph, jr, sr...Freshman, sophomore, junior, senior.
- H...Honors. Courses with an H following the course number satisfy honors requirements.
- V...Honors and Writing Intensive. Courses with a V following the course number satisfy both honors and liberal education writing intensive requirements.
- W...Writing Intensive. Courses with a W following the course number satisfy the writing intensive requirement for liberal education.
- A-F only...A-F grade basis only; course may not be audited or take pass/fail.
- A-F or Aud...A-F grade basis, or course may be audited for no grade.
- S-N only...S-N grade basis only (pass/fail), course may not be audited or taken A-F.
- S-N or Aud...S-N grade basis (pass/fail), or course may be audited for no grade.
- No Grade...No grade will be given for the course; typically used for laboratory components of courses.
- OPT No Aud...Student selects the grading option; course may not be audited.
- Stdnt Opt...Student selects the grading option; course may be audited.

Course Listing Sample

Xology (Xolo)
Xology and Diometrics
College of Liberal Education
Xolo 5101. Methods in Xology. (3-4 cr [max 8 cr]; A-F only. = 3101. Prereq: 3578 or #)
Historical, numerical, sociological, and Freudian methods of research in xology with applications to contemporary problems.

Course title
Course credits
Department
College
Course number
Course designer
Grading option
Course description
Credit will not be granted if credit has been received for the course listed after this symbol.
Prerequisite information
ACCT 3001. Technology Tools in Accounting. (1 cr.; A-F only; Every Fall & Spring) Introduction to basic and advanced applications of spreadsheet, database and other accounting specific to solve accounting problems. prereq: LSBE candidate

ACCT 3101. Intermediate Accounting I. (3 cr.; A-F only; Every Fall, Spring & Summer) Review of financial accounting standard setting, conceptual framework, and accounting process. Income statement, balance sheet, and statement of cash flows. Present value concepts, cash, receivables, inventories, fixed assets, current liabilities, and contingencies. prereq: LSBE candidate or non-LSBE accounting minor or college consent

ACCT 3102. Intermediate Accounting II. (3 cr.; A-F only; Every Fall & Spring) Long-term liabilities, stockholders’ equity, earnings per share, revenue recognition, and tax allocation. Investments, pensions, leases, accounting changes and error analysis, financial statement analysis, and disclosures in financial statements. prereq: A grade of C or better in 3101, LSBE candidate or non-LSBE accounting minor or college consent

ACCT 3201. Cost Accounting. (3 cr.; A-F only; Every Fall & Spring) Determining manufacturing costs, e.g., in a job order or process manufacturing environment. Cost-volume-profit relationships, activity-based accounting, standard costing techniques. prereq: LSBE candidate or non-LSBE accounting minor or college consent

ACCT 3301. Accounting Information Systems. (3 cr.; A-F only; Every Fall & Spring) Overview of the characteristics and functions of modern accounting information systems. Focus on system use, internal controls, security issues, and system design and implementation in computerized accounting procedures within the business organization. Develop proficiency in the use of accounting software. prereq: LSBE candidate or non-LSBE accounting minor or college consent; credit will not be granted if already received for 3110.

ACCT 3401. Individual Income Taxation. (3 cr.; A-F only; Every Fall, Spring & Summer) Provides an understanding of how taxes impact personal financial decisions. Takes tax planning/minimization perspective and provides basic information on reporting tax positions to the IRS. In addition to tax planning and compliance, the student will be exposed to basic tax concepts. prereq: Credit will not be granted if already received for ACCT 3152 or 4152; LSBE candidate or approved non-LSBE accounting minor or college consent

ACCT 3701. Small Business Initiative in Accounting. (1-2 cr. [max 3 cr.]; S-N or Audit; Every Fall) Provide practical experience in the development of budgets, analysis of financial statements and other types of small business accounting issues. prereq: 3001, 3101, LSBE candidate and instructor consent

ACCT 3705. Volunteer Income Tax Assistance. (1-2 cr. [max 3 cr.]; S-N only; Every Spring) Provides volunteer experience preparing tax returns for low and moderate income Duluth residents through both classroom and hands-on training. prereq: department consent, 2 credit first registration, 1 credit repeat; credit will not be granted if already received for 3096

ACCT 3796. Internship in Accounting. (1-6 cr. [max 18 cr.]; A-F only; Every Fall, Spring & Summer) Work-integrated learning program providing practical experiences within students’ major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course; 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations.

ACCT 3991. Independent Study. (1-3 cr.; A-F only; Every Fall, Spring & Summer) For students wishing to do special work in an accounting area that extends beyond, or in greater depth than, regular course offerings. prereq: BAC candidate with 80 cr, department consent; credit not available as accounting elective; may take ACCT 3191 and 3991 for a total of 3 credits

ACCT 4101. Auditing. (3 cr.; A-F only; Every Fall & Spring) Theory and procedures in audit process. prereq: 3102, 3151, 3991, LSBE candidate or college consent; no grad credit; credit will not be granted if already received for 4160.

ACCT 4402. Advanced Business Taxation. (3 cr.; A-F only; Every Fall) Understanding how taxes impact basic business and entrepreneurial decisions. It takes a tax planning/minimization perspective and presents advanced tax research and resource materials available on the web. prereq: 3401, LSBE candidate or college consent; credit will not be granted if already received for 3151 or 3402; no grad credit

ACCT 4501. Advanced Accounting. (3 cr.; A-F only; Periodic Fall & Spring) Topics including consolidated financial statements, partnership, and fiduciary accounting. prereq: 3102, LSBE candidate or college consent

ACCT 4505. International Accounting. (3 cr.; A-F only; Periodic Fall & Spring) International accounting measurement and reporting issues unique to multinational business transactions and multinational enterprises; consolidations; foreign exchange accounting; forward and option markets; translation of foreign currency financial statement; international audit environment; international taxation and transfer pricing; harmonization of worldwide accounting. prereq: 3102, LSBE candidate or college consent

ACCT 4600. Employee Benefit and Retirement Planning. (3 cr.; A-F or Audit; Periodic Fall) This course will provide preparation for professionals who will be providing employee benefits and retirement planning services for clients. The course will focus on the importance of retirement planning, an evaluation of the client’s needs, and understanding of Social Security and Medicare, and qualified and non-qualified retirement plans. prereq: Acct 3401, LSBE candidate, no grad credit

ACCT 4795. Special Topics (Various Titles to be Assigned). (1-3 cr. [max 9 cr.]; A-F only; Periodic Fall & Spring) Enables students, working closely with the instructional faculty, to explore one or more contemporary accounting issues in substantial depth. prereq: 3101, LSBE candidate or college consent

ACCT 5402. Advanced Business Taxation. (3 cr.; A-F or Audit; Every Fall) Understanding how taxes impact basic business and entrepreneurial decisions. It takes a tax planning/minimization perspective and presents advanced tax research and resource materials available on the web. prereq: MBA student or department consent

ACCT 5501. Advanced Accounting. (3 cr.; A-F or Audit; Periodic Fall & Spring) Topics including consolidated financial statements, partnership, and fiduciary accounting. prereq: MBA student or department consent

ACCT 5505. International Accounting. (3 cr.; A-F or Audit; Periodic Fall & Spring)
International accounting measurement and reporting issues unique to multinational business transactions and multinational enterprises; consolidations; foreign exchange accounting; financial markets; translation of foreign currency financial statement; international audit environment; international taxation and transfer pricing; harmonization of worldwide accounting. pre-req: MBA student or department consent

ACCT 5600. Employee Benefit and Retirement Planning. (3 cr.; A-F or Audit; Periodic Fall) This course will provide preparation for professionals who will be providing employee benefits and retirement planning services for clients. The course will focus on the importance of retirement planning, an evaluation of the client's needs, and understanding of Social Security and Medicare, and qualified and non-qualified retirement plans. pre-req: MBA student or department consent

Aerospace Studies (AIR)

AIR 100. AFROTC GCM Leadership Laboratory. (0 cr.; S-N or Audit; Every Fall & Spring) Practical environment giving leadership training while being instructed on military customs and courtesies, physical fitness, military drill and the general Air Force environment. This class is taken concurrently with AFROTC 1xxx and 2xxx level academic classes.

AIR 1000. AFROTC GCM Lead Lab. (; 1 cr. [max 6 cr.]; S-N or Audit; Every Fall & Spring) Practical environment giving leadership training while being instructed on military customs and courtesies, physical fitness, military drill and the general Air Force environment. This class MUST be taken concurrently with AFROTC 1xxx and 2xxx level academic classes.

AIR 1101. Foundations of the U.S. Air Force. (; 1 cr.; A-F or Audit; Every Fall) Two-part survey of U.S. Air Force as public-service organization. Role of military in U.S. society; military history; officerhood; professionalism; core values; career opportunities; customs/courtesies; communication skills. Leadership Laboratory (Air 0100) is mandatory for AFROTC cadets and complements this course by providing fellowship experiences.

AIR 1102. Foundations of the U.S. Air Force. (; 1 cr.; A-F or Audit; Every Spring) Two-part survey of U.S. Air Force as public-service organization. Role of military in U.S. society; military history; officerhood; professionalism; core values; career opportunities; customs/courtesies; communication skills. Leadership Laboratory (Air 0100) is mandatory for AFROTC cadets and complements this course by providing fellowship experiences.

AIR 1591. Leadership Practicum. (; 1-4 cr.; A-F or Audit; Every Fall & Spring) Leadership techniques and their practical application in structured problems and realistic situations; Air Force customs and courtesies.

AIR 2101. The Evolution of the U.S. Air Force Air and Space Power. (; 1 cr.; A-F or Audit; Every Fall) Air Force heritage; development/deployment of air power, a primary element of U.S. national security; leadership and quality principles; ethics and values. Leadership development based on student participation in group problem solving. Oral/written communication development. Leadership Laboratory (Air 0100) is mandatory for AFROTC cadets and complements this course by providing fellowship experiences.

AIR 2102. The Evolution of the U.S. Air Force Air and Space Power. (; 1 cr.; A-F or Audit; Every Spring) Air Force heritage; development/deployment of air power, a primary element of U.S. national security; leadership and quality principles; ethics and values. Leadership development based on student participation in group problem solving. Oral/written communication development. Leadership Laboratory (Air 0100) is mandatory for AFROTC cadets and complements this course by providing fellowship experiences.

AIR 3000. AFROTC POC Leadership Laboratory. (1 cr. [max 6 cr.]; S-N or Audit; Every Fall & Spring) Practical environment giving leadership training through teaching freshmen and sophomores military customs and courtesies, physical fitness, military drill and the general Air Force environment. This class is taken concurrently with AFROTC 3xxx and 4xxx level academic classes.

AIR 3001. AFROTC POC Lead Lab. (; 2 cr. [max 12 cr.]; S-N or Audit; Every Fall & Spring) Practical environment giving leadership training through teaching freshmen and sophomores military customs and courtesies, physical fitness, military drill and the general Air Force environment. MUST be taken concurrently with AFROTC 3xxx and 4xxx level academic classes.

AIR 3101. Air Force Leadership Studies. (3 cr.; A-F or Audit; Every Fall) Comprehensive study of leadership/quality management fundamentals, professional knowledge, organizational doctrine and ethics, and communication skills required of today's Air Force officer. Leadership/management case studies. A mandatory Leadership Laboratory (Air 3000) provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course.

AIR 3102. Air Force Leadership Studies. (3 cr.; A-F or Audit; Every Spring) Comprehensive study of leadership/quality management fundamentals, professional knowledge, organizational doctrine and ethics, and communication skills required of today's Air Force officer. Leadership/management case studies. A mandatory Leadership Laboratory (Air 3000) provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course.

AIR 3591. Leadership Practicum. (; 1-4 cr.; A-F or Audit; Every Fall & Spring) Practical application of leadership and management in structured realistic situations.

AIR 4101. National Security Affairs, Preparation for Active Duty. (3 cr.; A-F or Audit; Every Fall) Advanced leadership development; national security processes, regional studies, advanced leadership ethics, doctrine, the military as a profession, officership, military justice, civilian control of the military. A mandatory Leadership Laboratory (Air 3000) provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course. pre-req: No grad credit

AIR 4102. National Security Affairs, Preparation for Active Duty. (3 cr.; A-F or Audit; Every Spring) Advanced leadership development; national security processes, regional studies, advanced leadership ethics, doctrine, the military as a profession, officership, military justice, civilian control of the military. A mandatory Leadership Laboratory (Air 3000) provides advanced leadership experiences and the opportunity to apply the leadership and management principles of this course. pre-req: No grad credit

African & African American Std (AAAS)

AAAS 1101. Introduction to Black Caribbean Studies. (; 3 cr.; A-F or Audit; Spring Even Year) Study of the peoples and cultures of the Black Caribbean; impact of colonization; the evolution, form and content of Black Caribbean cultures, societies and institutions. A survey of the socioeconomic and political development and transformation of the nation-states of the Black Caribbean. Cultural reproductions of Caribbean racial and ethnic identities. Survey of the Caribbean diaspora; Caribbean social and political thought. Relationship with the United States, Britain, and Canada. Inter-Caribbean geopolitical relationship.

AAAS 1102. Introduction to Atlantic Slave Trade. (CDIVERSITY; 3 cr.; A-F or Audit; Spring Odd Year) Genesis of the Trans-Atlantic slave trade, survey of the Middle Passage along with historical formations of the slave trade. Examination of roles of the European powers and African nations with the creation of slave communities, identities, and cultures in the new world the political economy of the slave trade. Analysis of cultural and historical legacies of slavery, the abolitionist movement, and resistance to the abolitionist movement including modern day forms of slavery.

AAAS 1103. Introduction to Africa. (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Summer) Examination of the histories, cultures, and peoples of Africa. Pre-colonization Africa societies. Colonial and postcolonial contacts with Europe. Brief survey of major social, cultural, economic, and political institutions.
of Africa and their roles in socioeconomic and political development. Issues facing contemporary African societies. Programs and policies to address Africa’s problems. Africa and the world. Positioning Africa and its peoples in world affairs. prereq; Credit will not be granted if already received for AAAS 1100.

AAAS 1104. Introduction to Black America. (CDIVERSITY; 3 cr.; A-F or Audit; Every Spring) Examination of black America in historical and contemporary periods to the post Obama era. African roots in the formation of black American society; genesis of slavery; impact of slavery on black America; contestation of slavery; black oppression; powerlessness and marginality. Black agitation for civil and economic rights; African American social, cultural, economic, and political thoughts; the persistency of structural racial inequities on blacks; closing the gap of inequality; future of black America. prereq; credit will not be granted if already received for AAAS 1100

AAAS 3204. African Story-Telling and Folklore. (3 cr.; A-F or Audit; Every Fall & Spring) This course is about the importance of story-telling and folklore in diverse African societies. It will examine the social context of the types, forms, and genres of story-telling in African societies and the folklores associated with story-telling. It traces the history of story-telling in African societies before and after colonization, the cultural expressions and meanings of folklore, uses and applications of story-telling and folklore, and the role of community in defining the boundaries of story-telling and folkloric culture.

AAAS 3304. Social Inequalities in Education. (3 cr.; A-F or Audit; Periodic Fall) This course will examine past and current factors that contribute to the persistence of educational inequalities in the United States. Using a sociological frame of reference, the course will provide students with an understanding of 1) national trends in the achievement gap; 2) policies and programs that have been implemented to close the social inequalities in educational and 3) assessment of the effectiveness of policies to close the achievement gap. pre-req: Preferred AAAS 1104 or WS 2101

AAAS 3305. African American Cinema. (3 cr.; A-F or Audit; Every Fall) This course will investigate how the imagery, poetics and politics of race have played out in the history of African American film. Our focus will be African American cinema - which can be loosely defined as films written and/or directed by African Americans - but we will also consider the unique contours of its texts against the larger backdrop of Hollywood's representation of African Americans. In addition, we will explore the role of this medium in shaping social realities.

African American diaspora families. prereq; minimum 60 credits

AAAS 3202. African Story-Telling and Folklore. (3 cr.; A-F or Audit; Every Fall & Spring) This course is about the importance of story-telling and folklore in diverse African societies. It will examine the social context of the types, forms, and genres of story-telling in African societies and the folklores associated with story-telling. It traces the history of story-telling in African societies before and after colonization, the cultural expressions and meanings of folklore, uses and applications of story-telling and folklore, and the role of community in defining the boundaries of story-telling and folkloric culture.

AMIN 1103. Beginning Ojibwe I. (COMM & LAN; 3 cr.; A-F only; Every Fall) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge.

AMIN 1104. Beginning Ojibwe II. (COMM & LAN; 3 cr.; A-F only; Every Spring) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge. prereq; 1103 or instructor consent

AMIN 1606. Introduction to American Indian Literature. (CDIVERSITY,HUMANITIES; 3 cr.; A-F only; Periodic Fall & Summer) Introduces American Indian literatures from a variety of tribal perspectives as well as a wide range of genres including oratory, poetry, short stories, and novels. The major tropes and significant theories of American Indian literature will be covered. prereq; Credit will not be granted if already received for 1106

American Indian Studies (AMIN)

AMIN 1001. Introduction to American Indian Studies. (CDIVERSITY; 3 cr.; A-F or Audit; Every Fall) This course serves non-majors, majors, and minors, introducing them to the history, methodologies, and community-oriented aspirations of American Indian studies. Students will collaboratively explore texts, topics, intellectuals, and issues crucial to the field, thereby preparing themselves and one another to be ethically-engaged residents of the Anishinaabe lands in which our campus is situated, and to excel in other courses both within and well-beyond UMD’s AMIN curriculum.

AMIN 1010. American Indian Experience to 1900. (CDIVERSITY; 3 cr.; A-F or Audit; Every Fall) Introduction to the social, economic, political, and cultural changes and continuities of American Indian life up to 1900. Native-European encounters, the formation of the United States, and the establishments of hundreds of treaties between the federal government and Native nations has continued relevance for both Native peoples and Americans today. Students will closely interrogate how we interpret the past and how these narratives shape and inform the present. Credit will not be granted if already received for 1110.

AMIN 1020. American Indian Experiences: 1900-present. (HUMANITIES,CDIVERSITY; 3 cr.; A-F only; Every Spring) Through a chronological and biographical approach, the social, economic, political, and cultural changes and continuities of American Indian life from 1900 to the present will be introduced. Significant changes experienced by American Indians as well as their ability to adapt, resist, and thrive will be analyzed. prereq; Credit will not be granted if already received for 1120.

AMIN 2103. Intermediate Ojibwe I. (COMM & LAN; 3 cr.; A-F only; Every Fall) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge.

AMIN 2104. Intermediate Ojibwe II. (COMM & LAN; 3 cr.; A-F only; Every Spring) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge. prereq; 1103 or instructor consent

AMIN 1606. Introduction to American Indian Literature. (CDIVERSITY,HUMANITIES; 3 cr.; A-F only; Periodic Fall & Summer) Introduces American Indian literatures from a variety of tribal perspectives as well as a wide range of genres including oratory, poetry, short stories, and novels. The major tropes and significant theories of American Indian literature will be covered. prereq; Credit will not be granted if already received for 1106

AMIN 2103. Intermediate Ojibwe I. (COMM & LAN; 3 cr.; A-F only; Every Fall) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge.

AMIN 2104. Intermediate Ojibwe II. (COMM & LAN; 3 cr.; A-F only; Every Spring) Speaking and comprehension of basic Ojibwe speech patterns. Development of rudimentary reading knowledge.
AMIN 2210. American Indian Politics: Law, Sovereignty, and Treaty Rights. (CDIVERSITY, SOC SCI; 3 cr.; Student Option; Fall Even Year) Introduces critical terms and issues facing American Indian nations in their relationships with federal and state governments as well as their own conceptions of nationhood and law by critically analyzing the principal actors and discussing the roles national mythologies, media, identity, and activism play in law and policy formation. prereq: Credit will not be granted if already received for 2110.

AMIN 2405. American Indian Families and Society. (SOC SCI, CDIVERSITY; 3 cr.; AF or Audit; Every Fall) Indigenous North American families before European contact; impact of contact, events and governmental policies upon family structure and survival: Native parenting past and present; current issues for American Indian families.

AMIN 2407. Boarding Schools and Beyond: A History of American Indian Education. (CDIVERSITY; 3 cr.; Student Option; Fall Odd Year) Explores the diverse experiences American Indians have had in the U.S. educational system from federal boarding schools to contemporary public schools and tribal colleges. Students will be exposed to rhetorical and political aspects of education. prereq: Credit will not be granted if already received for 2707.

AMIN 2605. Survey of American Indian Arts. (FINE ARTS, CDIVERSITY; 3 cr.; AF-only; Periodic Fall & Spring) Traditional arts of American Indians and the cultures that produced them; techniques, motifs, and aesthetics of Indian textiles and utilitarian and ceremonial arts. prereq: Credit will not be granted if already received for 2105.

AMIN 2801. Introduction to Tribal Administration and Governance. (; 3 cr.; AF or Audit; Periodic Fall & Spring) This course will provide an overview of tribal administration and government. It will introduce students to principles of tribal sovereignty, tribal self-determination, and self-governance. Students will learn the significance of tribal constitutions, tribal jurisdiction and tribal laws. Students will be introduced to the interaction of federal, state, and tribal governments and how these interactions impact the governance of Native Nations. Students will be introduced to a variety of tribal government systems, and some common practices and problems in the administration of a tribal government.

AMIN 2820. Foundations of Indigenous Leadership. (; 3 cr.; AF or Audit; Periodic Fall & Spring) Foundations of Indigenous Leadership is an historical survey of indigenous leaders with special emphasis on the Great Lakes region. By examining the histories of indigenous leaders and communities we will explore what makes for effective indigenous leaders. The role of traditional ethics in leadership will be a central theme of the course.

AMIN 3206. Federal Indian Policy. (CDIVERSITY, SOC SCI; 3 cr.; AF-only; Periodic Fall & Spring) Examination of the formulation, implementation, evolution, and comparison of Indian policy from pre-colonial to self-governance. Introduces students to the theoretical approaches structuring research of federal Indian policy, views, and attitudes of the policy-makers and reaction of indigenous nations. Discussion of the policies and the impact related to those policies. prereq: minimum 30 credits; this course previously titled: Indian-White Relations; credit will not be granted if already received for 3106.

AMIN 3230. American Indian Tribal Government and Law. (CDIVERSITY, SOC SCI; 3 cr.; AF or Audit; Periodic Fall & Spring) American Indian tribal governments and leadership, historically and today, have aimed at the promotion and protection of the nation, overseen domestic and foreign affairs, and provided for the basic needs and desires of their citizens. This course provides students a general background of the history, development, structure, and politics associated with indigenous governments, analyzing how these institutions have been modified to meet ever-changing internal needs and external pressures. prereq: minimum 30 credits

AMIN 3393. Projects in American Indian Studies. (1-5 cr. [max 10 cr.]; AF-only; Every Fall, Spring & Summer) Directed reading, research, or involvement in social action culminating in the preparation of a paper. prereq: instructor consent; maximum 10 credits

AMIN 3410. Fur Trade in Canada and the United States. (CDIVERSITY; 3 cr.; AF-only; Periodic Fall) Historical review and analysis of Canadian and U.S. Indians in the fur trades. prereq: minimum 30 credits

AMIN 3420. American Indians in Sports. (CDIVERSITY; 3 cr.; AF or Audit; Fall Even, Spring Odd Year) The role of sports and games in Native tradition and tribal sovereignty; development of individual and tribal self-determination; indigenous and adapted games and sports integration of tribal epistemologies into sports; Native sports figures and leaders; history of Native sports pre-Contact through the present. prereq: 30 credits; credit will not be granted if already received for 3110.

AMIN 3430. Global Indigenous Studies. (GLOBAL PER; 3 cr.; AF or Audit; Periodic Fall, Spring & Summer) This course fosters a consideration of the planet’s indigenous peoples, emphasizing their various and varying cultural, territorial, political, social, legal, aesthetic, economic, and intellectual contributions and claims. Exploring indigenous peoples’ relationships with one another, with settler governments, with non-governmental organizations, and with supranational institutions, students in the course will develop a broad understanding of the increasingly global trajectories of indigenous studies.

AMIN 3450. American Indian Women. (CDIVERSITY; 3 cr.; AF or Audit; Fall Odd, Spring Even Year) American Indian women in tribal societies before and after European contact: Indian women as stewards of knowledge, tradition, and society; impact of colonization; traditional and contemporary female leadership. prereq: minimum 30 credits; credit will not be granted if already received for 3250.

AMIN 3620. Ojibwe Literatures: Sovereignty and Survival. (CDIVERSITY; 3 cr.; AF or Audit; Fall Even Year) Study of a selection of Ojibwe literatures from the 1800s to the present including traditional stories, poetry, political/activist writings, journalism, novels and short stories. Works will reflect the diversity, resistance, adaptation, and survivance of Ojibwe people. prereq: 1106, 1606; 30 credits; Credit will not be granted if already received for 3520.

AMIN 3660. American Indian Novel. (CDIVERSITY, HUMANITIES; 3 cr.; AF or Audit; Periodic Spring) Approximately four novels by American Indian authors are read with an explanation of the novels and the milieu that produced them. Credit will not be granted if already received for 3260.

AMIN 3810. Fundamentals of Tribal Strategic Management. (; 3 cr.; AF or Audit; Periodic Fall & Spring) This course examines the theory and practice of strategic planning and management for tribal governments, public agencies, nonprofit organizations, collaborations, and tribal communities.

AMIN 3820. Fundamentals of Tribal Project Management. (; 3 cr.; AF or Audit; Periodic Fall & Spring) This course covers the processes of project management based upon the Project Management Institute (PMI) standards and knowledge areas. By the completion of the course, students will be able to demonstrate knowledge of project management terms and techniques such as: the triple constraint of project management and project management knowledge areas. They will also have the tools and techniques of project management such as: selection methods; work breakdown structures; Gantt charts, network diagrams, critical path analysis; cost estimates; earned value management; and motivation theory and team building.

AMIN 3830. Fundamentals of Tribal Operations Management. (; 3 cr.; AF or Audit; Periodic Fall, Spring & Summer) This course will provide an overview of effective operations within tribal governments. Beginning with an analysis of various tribal constitutions and the branches of tribal governments, students will examine the functionality of tribal government organizational structures. Students will examine how execution of day-to-day operations works within that larger tribal organization. This class also explores how amending tribal constitutions can improve the delivery of services to community members.
AMIN 3995. Special Topics: (Various Title to be Assigned). (3 cr. [max 12 cr.]; A-F only; Periodic Fall & Spring) Study of topics not included in regular curriculum. prereq: minimum 30 credits

AMIN 3997. Internship in American Indian Studies. (4-8 cr. [max 24 cr.]; A-F only; Every Fall, Spring & Summer) Supervised lab experience in American Indian agency or project or with significant Indian clientele. Advance, concurrent, and follow-up written and oral presentations. prereq: instructor consent

AMIN 4191. Senior Study of Ojibwe Language. (1-6 cr. [max 12 cr.]; A-F only; Every Fall, Spring & Summer) Individual opportunity to devise and/or be involved in programs to increase fluency. prereq: 1103, instructor consent; no grad credit; a total of 12 credits may be taken between AMIN 4191 and AMIN 4302

AMIN 4230. Introduction to Federal Indian Law. (CDIVERSITY, SOC SCI; 3 cr. ; A-F only; Periodic Fall & Spring) Federal Indian law has had a profound effect on our lives, liberties, and properties of indigenous peoples. At times, U.S. policy and Supreme Court ruling shave worked to protect aboriginal rights, while at other times they have had devastating consequences. This course examines the role of the U.S. Supreme Court as a policy-making institution in their dealings with Indigenous nations, requiring us to ask about the origins of federal judicial power and their application indigenous peoples. prereq: minimum 60 credits; credit will not be granted if already received for AMIN 3333

AMIN 4240. American Indian Education Policy Development in the 20th Century. (CDIVERSITY; 3 cr. ; A-F or Audit; Every Fall & Spring) Development of educational policies for American Indian people through the 20th Century and examines shifts in educational policy the impact of such policy and how American Indians reacted to the nature of education programs and sought to reform schools to better meet tribal and community needs. Features of American Indian education policy development such as the relationship and role of research and science, public perceptions of American Indians, Indian activism, and tribal and community involvement in educational policy. A number of policy themes will be explored such as language and culture, self-determination and control, expansion of education opportunities and the well being of American Indian children and youth through the statutory and programmatic iterations of these themes. The focus will be on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. prereq: Grad student; credit will not be granted if already received for AMIN 4801/EDUC 4801

AMIN 4250. American Indian Diplomacy: Treaties, Compacts, and Agreements. (GLOBAL PER; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Indigenous Nations have long engaged in diplomatic arrangements with one another, foreign nations, colonial/state governments, and the United States. Such political engagements affirm the inherent sovereignty of First Nations, recognizing the distinctive rights and power unique to Native peoples and were used to forge friendships, end wars, cede lands and resources, create reservations, and reserve hunting and fishing rights. This course examines the history of First Nations treaty making, the legal and political status of Indian treaties and agreements, the ambiguities and problems in indigenous-state diplomacy and treaty litigation. prereq: minimum 60 credits

AMIN 4630. American Indians and the Media. (CDIVERSITY,HUMANITIES; 3 cr. ; A-F only; Periodic Fall & Spring) Examination of Native controlled and non-Native images of American Indians in varied media including journalism, television, and advertising from the times of European contact to the present. Explorations and comparisons of historic images with the contemporary. Students will participate in a hands-on media watch research project. prereq: minimum 60 credits

AMIN 4640. American Indians in the Movies. (CDIVERSITY,HUMANITIES; 3 cr. ; A-F or Audit; Every Fall) Indian Country at the beginning of the film era; government Indian policies during the film era; silent film; war and romance; westerns; Indian and White heroes and heroines; stereotypes; modern Native-made film. prereq: 60 credits

AMIN 4810. Business Processes in Tribal Administration. (3 cr. ; A-F or Audit; Periodic Fall & Spring) This course examines fundamental business “best practices” in accounting, economics, operations, organizational management, statistics, financial management, marketing, and human resources within the specific context of Tribal enterprises and government.

AMIN 4840. Current Issues and Opportunities in Tribal Administration and Governance. (3 cr. ; A-F or Audit; Periodic Fall & Spring) This course will study central issues and opportunities for tribal governments and consider innovative administrative/governance approaches. New Supreme Court cases, Congressional Acts and administrative policies provide new issues for tribal governments to react to and possibly may require a change to their administrative approaches to policy matters. Examples include Supreme Court decisions which have reduced tribal jurisdiction or Acts of Congress, such as the Indian Health Care Improvement Act, which changes or enhances health care delivery. Students will learn the significance of how external decisions by the federal or state government might impact tribal decision making. Students will also learn how enhancement and improvements to tribal constitutions or laws may benefit tribal members, communities as well as the surrounding non-Native communities. Students will learn how problems can become opportunities, and how jurisdictional challenges require agile, innovative approaches by Native Nations.

AMIN 4990. Directed Research. (1-6 cr. [max 72 cr.]; A-F only; Every Fall, Spring & Summer) Qualified seniors and graduate students may register for work on tutorial basis in research of an advanced nature in American Indian Studies. prereq: instructor consent, max 8 credits to grad program

AMIN 5081. American Indian Education Policy Development in the 20th Century. (; 3 cr. ; A-F or Audit; Every Fall & Spring) Focus on the development of educational policies for American Indian people through the 20th Century and examines shifts in educational policy the impact of such policy and how American Indians reacted to the nature of education programs and sought to reform schools to better meet tribal and community needs. Features of American Indian education policy development such as the relationship and role of research and science, public perceptions of American Indians, Indian activism, and tribal and community involvement in educational policy. A number of policy themes will be explored such as language and culture, self-determination and control, expansion of education opportunities and the well being of American Indian children and youth through the statutory and programmatic iterations of these themes. The focus will be on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. prereq: Grad student; credit will not be granted if already received for AMIN 4801/EDUC 4801

AMIN 8593. Directed Study. (; 1-6 cr. [max 12 cr.]; Student Option; Every Fall & Spring) Individual graduate study under supervision of a faculty member in the Department of American Indian Studies, pre-reg: graduate student and instructor consent

American Sign Language (ASL)

ASL 2001. Beginning American Sign Language I. (COMM & LAN; 3 cr. ; A-F or Audit; Every Fall) Introduction to basic vocabulary in American Sign Language and the fingerspelling alphabet. prereq: Credit will not be granted if already received for CSD 2001

ASL 2002. Beginning American Sign Language II. (COMM & LAN; 3 cr. ; A-F or Audit; Every Spring) Expansion of vocabulary base in American Sign Language. In-depth study of principles of American Sign Language as used receptively and expressively in communication with deaf individuals. prereq: 2001 or instructor consent; credit will not be granted if already received for CSD 2002

ASL 3003. Intermediate American Sign Language I. (COMM & LAN; 3 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring)
Intermediate-level study of grammatical and linguistic features of ASL; focus on understanding deaf culture and fluency in expressive and receptive skills. preq: 2002 or instructor consent; credit will not be granted if already received for CSD 5003

ASL 3004. Intermediate American Sign Language II. (COMM & LAN; 3 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring) Continued intermediate-level study of grammatical and linguistic features of ASL; focus on understanding deaf culture and fluency in expressive and receptive skills. preq: 3003 or instructor consent; credit will not be granted if already received for CSD 5004

ASL 4005. Advanced American Sign Language. (COMM & LAN; 3 cr. [max 4 cr.]; A-F or Audit; Every Fall) Advanced level study of American Sign Language vocabulary and structure. Expressive and receptive skill development. Additional focus on use of ASL by the deaf community. preq: 3004 or instructor consent; no grad credit; credit will not be granted if already received for CSD 4005

ASL 4100. Linguistics of American Sign Language. (4 cr.; A-F only; Every Fall & Summer) Introductory study of the linguistics of ASL. Comparative study of the linguistic structure of ASL and English. Overview of language as a system within a cultural context. preq: 3004 or instructor consent, no grad credit

ASL 4105. History of the American Deaf Community. (CDIVERSITY; 3 cr.; A-F or Audit; Every Spring) Historical roots of the American Deaf Community, including the establishment and growth of the Deaf Education system, the role of the residential schools in Deaf Culture, power and culture differentials, and systemic oppression. Interrelations of American Sign Language and the deaf community. History, customs, and practices of the American Deaf Community. Dynamics of minority cultural existence. Application of cultural theory to evaluation of the deaf life experience in the United States from 1800-present. preq: no grad credit

ASL 4110. Deaf Culture. (4 cr.; A-F only; Every Spring & Summer) Exploration of the history of the deaf community in the United States. Topics will include the deaf community as a cultural and linguistic group with cultural norms, values and traditions. Minority dynamics and cross-cultural interactions also will be covered. ASL will be the language of instruction. preq: 3004 or instructor consent, no grad credit

ASL 4295. Special Topics: Various Titles to be assigned. (1-3 cr. [max 8 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Special topics in American Sign Language to be assigned. preq: 2001

ASL 4298. American Sign Language Skill Building Workshop. (1 cr.; A-F or Audit; Every Fall, Spring & Summer) Instruction and intensive practice in various subjects related to American Sign Language. preq: 2002 or instructor consent, no grad credit

Anthropology (ANTH)

ANTH 1080. Understanding Global Cultures. (GLOBAL PER, SOC SCI; 4 cr.; A-F only; Fall Odd Year) Explores nations around the globe towards the goal of developing a cross-cultural understanding of how cultures function. Explores America as a foreign culture, looking at the United States from the viewpoints of foreign anthropologists and other scholars, using comparative ethnographic perspectives to interpret aspects of American culture.

ANTH 1602. Biological Anthropology and Archaeology. (SOC SCI; 4 cr.; A-F or Audit; Every Fall & Spring) Origin and development of extinct and living human forms, primatology, human biological variations, the race concept, evolution, and development of human societies up to the earliest stages of ancient civilizations.

ANTH 1604. Cultural Anthropology. (GLOBAL PER, SOC SCI; 4 cr.; A-F or Audit; Every Fall & Spring) Introduces representative cultures of the world and to concepts and methods of cultural anthropology, focusing on range of variation and degree of uniformity in human behavior and in cultural adaptations.

ANTH 1612. Introduction to Archaeology. (SOC SCI; 4 cr.; A-F or Audit; Periodic Fall & Spring) Basic principles of archaeology with examples of their application to world prehistory.

ANTH 1620. Introduction to Public Culture: Citizenship, Science, and Culture. (GLOBAL PER; 4 cr.; A-F or Audit; Every Fall) Integrative approach connecting culture, science, and law to the practical work of managing critical shared resources for the public good in the 21st century. Course examines how governance of shared natural resources (climate, water, wildlife) is connected to governance of community and cultural resources (internet, electricity grids, knowledge, and storytelling). Topics highlight diverse approaches to citizenship and sustainability as found in sci-fi fiction, public science, public art, land trusts, indigenous land stewardship traditions.

ANTH 2001. Career Development in Anthropology. (2 cr.; A-F only; Periodic Fall & Spring) Overview of career opportunities for anthropological skill sets. The mechanics of career development: locating jobs; matching skills to job requirements; networking; writing resumes, cover letters, CV’s, and graduate application essays. A focus on the lifelong process of building a career.

ANTH 3080. Cultural Constructions of the Body. (4 cr.; A-F or Audit; Every Fall & Spring) Contemporary cultural constructions of the human body. How biology and culture intersect in body building, menstruation, childbirth, and tattooing. Students gain skills in reading the body as social text and learn core theoretical approaches to cultural studies of the body. preq: Minimum 30 credits or instructor consent; credit will not be granted if already received for CST 3080

ANTH 3100. Business Anthropology. (4 cr.; A-F or Audit; Periodic Fall & Spring) Demonstrating the rich area of Applied Anthropology, this course surveys the ways in which anthropologist work in and on transnational corporations. Anthropological research in marketing and consumer behavior, as well as in the organizational culture of contemporary and historical businesses influences various industries, particularly in technology and new media products. Contemporary corporations also consume anthropology, often deploying anthropological language and concepts with or without any ethnographic fieldwork. Students will discover various anthropological encounters with the business world, and will have the opportunity to contribute and engage in those encounters over social media. preq; minimum 30 credits

ANTH 3156. Digital and Participatory Research Methods. (4 cr.; A-F or Audit; Periodic Fall & Spring) This course teaches participatory research and media production as practiced in anthropology as a transformative process through which students can become agents of change. The course engages students through scholarly and active learning to develop research skills, including digital and participatory methods in collaboration with people studied, to facilitate cultural and visual literacy. Course emphasizes field techniques, data analysis, and interpretation, and the use of digital technologies (such as videos, social media, etc.) as course of data as well as means of communication. Lab. preq; minimum 30 credits

ANTH 3300. Energy, Culture and Society. (GLOBAL PER; 4 cr.; A-F or Audit; Spring Even Year) This course takes a cross-cultural and interdisciplinary view of energy. It examines the history of energy generation and use in the US with attention to economic and ecological systems as well as cultural assumptions asking how did the US grow to be the largest consumer of energy in the history of the world? By studying case studies of electrification in the global north and south; post-Fukushima nuclear energy politics in Japan and Germany; the impact of global gas and oil markets on local US communities, and the growth of renewable energy, this course aims to give students methods, tools and perspectives to understand, critique, and ultimately influence (personal and societal) assumptions, policies, economics, and technical systems surrounding energy generation and use. preq; minimum 30 credits

ANTH 3618. Ancient Middle America. (3 cr.; A-F or Audit; Periodic Fall)
Survey of major pre-Hispanic cultures of Mesoamerica, including the Olmecs, Maya, Toltecs, Mixtecs, and Aztecs. Using comparative ethnographic and archaeological materials, the course explores the arrival of hunter-gatherer-foragers, the beginnings of agriculture, and formation of early villages, native mathematical and calendar and writing systems, the florescence of regional art styles, and the religious sociopolitical, and economic development of Classical and Postclassical civilizations through the arrival of the Spanish Conquistadors. prereq: minimum 30 credits

ANTH 3622. Archaeology of the Old World. (3 cr.; A-F or Audit; Periodic Fall & Spring) Survey of major themes arising with Homo sapiens, e.g., domestication, urbanism, social inequality, gender relations, development of hierarchical political structure, and human impacts on, and adaption to the environment. Examples drawn from cultural areas in Europe, Africa, and Near East and/or Asia. prereq: minimum 30 credits

ANTH 3624. Archaeology of North America. (3 cr.; A-F or Audit; Periodic Fall & Spring) Survey of archaeological data for major cultural areas of North America north of Mexico. prereq: minimum 30 credits

ANTH 3628. Women in Cross-Cultural Perspective. (3 cr.; A-F or Audit; Periodic Fall & Spring) Cross-cultural survey of gender systems, focusing on contemporary women's lives around the world. prereq: minimum 30 credits

ANTH 3632. Latin American Cultures. (3 cr.; A-F or Audit; Periodic Fall & Spring) Survey of social, political, economic, and religious organization of contemporary national and native cultures of Mexico, Central America, and South America. prereq: 1604, minimum 30 credits

ANTH 3635. Peoples and Cultures of Europe. (3 cr.; A-F or Audit; Periodic Fall & Spring) Exploration of European peoples to develop a cross-cultural understanding of how cultures function. Survey of social, political, economic, religious, family and kinship, gender, urban, globalism/globalization. prereq: minimum 30 credits

ANTH 3638. Peoples and Cultures of the Middle East. (3 cr.; A-F or Audit; Periodic Fall & Spring) Examines how anthropologists study the cultures and social institutions of the modern Middle East. Focus on religion, family life, gender, politics, economy, urban ways of life, kinship and marriage, and the impacts of globalism. prereq: minimum 30 cr or instructor consent

ANTH 3640. What is a City?: Archaeological Perspectives on Urbanism. (SUSTAIN; 3 cr.; A-F or Audit; Periodic Fall & Spring) Survey of historically and archaeologically documented urban case studies and thematic concepts, e.g., the use of space, political and economic implications of living in a city, abandonment of cities, and the impact of cities on the environment. Liberal Education sustainability credit will be effective fall 2015. prereq: Min 30 cr or instructor consent

ANTH 3641. The City in Film. (FINE ARTS; 4 cr.; A-F or Audit; Every Fall) Exploration of the modern industrial, postmodern global and relocalized sustainable city through film. Films dramatizing the transformation of urban society by industrialization, the car, globalization, and New Urbanism (US and Europe) as well as the emergent megacities of China, India, and Africa highlight the historical trajectory of the modern urban form and question its future in relation to a sustainable planet. Students produce a short digital city film as a final project.

ANTH 3691. Independent Study in Anthropology. (1-5 cr. [max 10 cr.]; A-F only; Every Fall, Spring & Summer) Directed reading and research in ethnography leading to preparation of paper. prereq: preferred minimum 30 credits, instructor consent

ANTH 3888. Anthropology of Food. (SUSTAIN; 3 cr.; A-F only; Every Fall, Spring & Summer) Advanced survey and comparative study of the relationship between food and culture in the past and present. Topics include: the prehistoric, biological, and cultural aspects of the collection, production, distribution, preparation, and consumption of food, and an analysis of its social, cultural, political, and economic significance. prereq: minimum 30 credits

ANTH 4100. Visual Anthropology. (4 cr.; A-F or Audit; Periodic Fall & Spring) Visual Anthropology encompasses the anthropological study of all visual representations. This course will engage students in histories and analyses of representations and visual product artifact from many cultures. Artifacts and visual objects studies may include sand painting, tattoos, sculptures and reliefs, cave paintings, jewelry, hieroglyphics, painting, photographs, and new media production. The study of human vision, properties of media, and relationship between visual and form and function are also central to this anthropological subfield. Student will have the opportunity to create small visual objects on a weekly basis during the bulk of the semester. prereq: minimum 30 credits

ANTH 4500. The New Commons: Governing Shared Resources for Present and Future Generations. (SUSTAIN; 4 cr.; A-F or Audit; Every Fall) This course examines efforts and provides skills to manage water, climate, wildlife, and internet, cultural heritage and other key pieces of ecosystem and community infrastructure at global and local levels as "commons," shared resources governed by culturally diverse, engaged communities for present and future generations. prereq: Minimum 90 credits or grad student; credit will not be granted if already received for CST 4500

ANTH 4616. Culture and Personality. (3 cr.; A-F or Audit; Periodic Fall & Spring) Role of culture in forming of personality; problems of individual adjustment to demands of culture. Psychological and sociopsychological approach to culture. prereq: 1604, min 60 cr

ANTH 4620. Archaeological Method and Theory. (4 cr.; A-F or Audit; Fall Even Year) Principles of archaeology including data collection, data analysis, history of the field, theoretical approaches, laws, and professional ethics. prereq: minimum 60 credits or instructor consent; credit will not be granted if already received for 1612; no grad credit

ANTH 4621. Myth and Sacred Symbols. (3 cr.; A-F or Audit; Periodic Spring) Interpretation of myths and sacred symbols found in beliefs and rituals of selected traditional cultures. prereq: 1604, min 60 cr

ANTH 4623. Anthropology and Contemporary Human Problems. (3 cr.; A-F or Audit; Periodic Fall & Spring) Cultural roots of such interrelated contemporary human problems as overpopulation, food production and distribution, health and nutrition, social and ecological disorders. Review of alternative solutions to such problems as suggested by anthropological study and analyses. prereq: 1604, minimum 60 credits

ANTH 4631. Anthropology and Environment. (SUSTAIN; 3 cr.; A-F or Audit; Periodic Fall & Spring) In-depth study of some of the methods and concepts concerning the interrelations of certain human populations with their environments in diverse natural, cultural, historical, and evolutionary settings. prereq: 1604, min 60 cr

ANTH 4632. Anthropology of Landscapes. (SUSTAIN; 3 cr.; A-F or Audit; Periodic Fall & Spring) Cross-cultural examination of concepts related to landscape and space. Topics include culturally constructed landscapes, notions of belonging, memory, pilgrimage, commemoration, and ways of gaining food and resources. Theoretical background and analytical examples drawn from the four subfields of anthropology: cultural, physical, linguistics, and archaeology. Liberal Education sustainability credit will be effective fall 2015. prereq: minimum 60 credits or grad student or instructor consent

ANTH 4633. Ethnobotany. (SUSTAIN; 4 cr.; A-F only; Periodic Fall & Spring) An advanced survey and study of interrelations between humans and plants, including material, symbolic, ritualistic and other aspects of human-plant interactions. Combines cultural anthropology and botany to investigate the roles of plants as food, medicine, natural resources and/or gateways to culturally sanctioned religious experiences. Liberal Education sustainability credit will be effective fall 2015. prereq: minimum 60 credits or instructor consent

ANTH 4640. Medical Anthropology. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Comparative, cross-cultural examination of sickness and healing. Drawing from ethnographic work on indigenous, alternative, and Euro-American medical systems as well as shamanism, the course works with symbolic, social, political, and historical perspectives. prereq: minimum 60 credits or grad student, or instructor consent

**ANTH 4644. Anthropology of Law.** (4 cr.; A-F or Audit; Spring Odd Years)
Introduces key concepts, issues, and methods of legal anthropology and considers how, in various parts of the world, legal systems are integrating local and indigenous conceptions of justice with the formal procedures and institutions of the state. Particular attention is given to culturally creative uses of law to achieve public justice with respect to environmental and economic domains. prereq: minimum 60 credits or instructor consent; no grad credit

**ANTH 4651. Development of Anthropological Theory.** (4 cr.; A-F or Audit; Every Fall)
Theoretical perspectives from mid-19th century to the present; examines the interrelationship of method and theory, and implications for practice of anthropology. prereq: minimum 90 credits, no grad credit

**ANTH 4652. Cultural Theory for Wicked Problems.** (4 cr.; A-F or Audit; Periodic Fall & Spring)
A wicked problem is a social or cultural problem difficult to solve for many reasons: incomplete or contradictory knowledge, the number of people or opinions involved, the large economic burden of solutions, and the interconnected nature of these with other problems. This course explores the ways that cultural theory provides critical insights in complex contemporary arenas such as government policy, nonprofit work, law, business, communications, education, health issues, environment and conservation, natural resources management, risk management, natural disaster responses, and more. The goal of the course is to teach students the value of cultural theory in understanding and working within the complexities of the contemporary world. prereq: minimum 30 credits

**ANTH 4653. Senior Seminar.** (3 cr.; A-F or Audit; Every Spring)
Contemporary topics in selected branches of anthropology. Active participation in group research project to develop and enhance anthropological research skills. prereq: minimum 90 credits or instructor consent; no grad credit

**ANTH 4654. Biological Anthropology.** (3 cr.; A-F or Audit; Periodic Fall & Spring)
The human skeleton as source of information about individual variations, population structure, and human evolution. Study of human remains from archaeological sites, morphology, paleopathology, and relevant statistical methods. Lectures and labs emphasize acquiring practical experiences in analysis and interpretation. prereq: minimum 60 credits or instructor consent

**ANTH 4655. Forensic Anthropology.** (4 cr.; A-F or Audit; Every Spring)
This class is designed to familiarize students with the fundamentals of forensic anthropology, including identification of skeletal elements, pathology, age, sex, and population affinity, stature, occupational markers and selected other topics. prereq: minimum 60 credit or instructor consent; no grad credit

**ANTH 4691. Independent Study in Anthropology.** (1-5 cr.; A-F only; Every Fall, Spring & Summer)
Directed reading and research leading to preparation of a final written and/or digital project. prereq: Preferred minimum 60 credits, instructor consent, no grad credit

**ANTH 4695. Special Topics: (Various Titles to be Assigned).** (1-5 cr. [max 10 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Seminar on topics in selected branches of anthropology. prereq: minimum 60 credits

**ANTH 4696. Field Research in Archaeology.** (1-10 cr.; A-F only; Periodic Summer)
Archaeological excavation, survey, and research in actual sites. Location may vary. prereq: instructor consent

**ANTH 4697. Anthropology Internship.** (2-6 cr.; S-N only; Every Fall, Spring & Summer)
Supervised experience in a workplace relevant to student's academic interests within the major: social service agency, museum, immigration services, school or other, approved by instructor. In consultation with instructor, students will also complete assignments relevant to the job setting, e.g., setting learning objectives, techniques for measuring progress, and/or report writing. prereq: preferred minimum 60 credits, instructor consent, no grad credit

**ANTH 4699. Honors Project.** (2-4 cr.; A-F only; Every Fall, Spring & Summer)
Advanced individual project in any area of anthropology demonstrating sound theoretical, methodological, and research foundations. Topic chosen in consultation with the honors advisor. The student will give a public presentation of their written and/or digital final project. prereq: instructor consent; no grad credit

**ANTH 4910. Teaching Assistantship in Anthropology.** (1-3 cr.; A-F only; Every Fall, Spring & Summer)
Practical experience in teaching-related activities in anthropology courses. prereq: Minimum 60 credits and instructor consent, no grad credit; minimum 3 credits between ANTH 4997 and 4910

**ANTH 4985. Critical Animal Studies.** (4 cr.; A-F or Audit; Periodic Fall & Spring)
This course explores the ways in which animal lives intersect with human lives, including the evolution of social, cultural, scientific, and religious attitudes toward animals. We will examine the dynamics of power and visualization in the ways animals are culturally framed and constructed. Students will also learn to critically analyze a variety of ethical debates about animals in society, such as the eating of animals, animal experimentation, zoos, hunting, ownership, and legal status. prereq: minimum 30 credits earned or instructor consent; no grad credit

**Applied Material Science (AMS)**

**AMS 5101. Materials Analysis & Design I.** (6 cr.; A-F or Audit; Every Fall)
Overview of the structure, properties, processing, and performance of traditional materials of metals, ceramics, and polymers. Course will be delivered via an integrated learning approach, where course content taught in the lectures and labs will be applied to 2-3 projects concurrently throughout the semester on product or equipment design. preq: CHE 3233 or ME 2105 or Grad student or instructor consent

**AMS 5102. Materials Analysis & Design II.** (6 cr.; A-F or Audit; Every Spring)
Overview of design, manufacturing and experimental characterization of fiber reinforced polymer (FRP) composite materials and degradation to materials. Course will be delivered via an integrated learning approach, where course content taught in the lectures and labs will be applied to 2-3 projects concurrently throughout the semester on product or equipment design. preq: AMS 5101 or MATH 1297 and CHEM 11545 and PHYS 2015 or Grad student or instructor consent

**AMS 5555. Applied Materials Science Project Credits.** (3-6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Master of Applied Science project work as determined by faculty adviser and student with approval by the program director of graduate studies. preq: MS AMS candidate, instructor consent

**AMS 8777. Thesis Credits: Master's.** (1-10 cr.; No Grade Associated; Every Fall, Spring & Summer)
Master's thesis credits. preq: AMS graduate student and instructor consent

**Art (ART)**

**ART 901. Graphic Design Portfolio Review.** (0 cr.; S-N only; Every Spring)
Presentation of portfolio and other required evaluative materials for admission to graphic design major candidacy. prereq: (repeatable one time), 9 credits in art courses, pre-graphic design major or pre-graphic design and marketing major or department consent

**ART 902. Studio Art Portfolio Review.** (0 cr.; S-N only; Every Fall & Spring)
Presentation of portfolio and other required evaluative materials for admission to studio art major candidacy. prereq: 15 credits in art courses, pre-studio art major or department consent

**ART 903. Art Education Portfolio Review.** (0 cr.; S-N or Audit; Every Fall & Spring)
Presentation of portfolio and other required evaluative materials for admission to art education major candidacy. prereq: (repeatable
ART 1001. Art Today. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall) Introductory survey of the study of art and its historical sources.

ART 1002. Introduction to Art. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Studio course with strong lecture component for those with little or no previous experience in art, introducing various materials, techniques, and concepts. Studio work, lectures, class discussions, viewing artworks, and outside reading. Prereq: Not for art majors or minors except those in art history.

ART 1003. Introduction to Design. (FINE ARTS; 3 cr.; A-F or Audit; Every Spring) Introductory survey of the design of visual communication and the design of everyday objects, emphasizing the social and historical meaning of design and the ways in which design shapes public and private experience. From clothes to cars, from websites to street signs, from plates to phones to plazas, design can help or hinder users perform tasks while it helps them construct identity and meaning.

ART 1004. Sustainable Visual Culture Practices. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall & Summer) The course examines art and design practices worldwide that are responding to current sustainability challenges and offering transformative solutions. We will explore definitions, principles and goals of sustainability and identify current global challenges, including water protection and land use, energy and waste, ecosystems and habitat, ecological debt and social inequity, framed within the intersection of class, gender and race. Within a participatory, interactive learning environment, we will analyze the work of artists and designers that are creating strategies to transition to live within planetary boundaries. Case studies of participatory and ecological art, cradle-to-cradle design and bioremediation, are among the practices that will be introduced, discussed and critiqued. Through engaged learning methods, including journaling, collaging, photographing and working in pairs and groups, participants will explore their own relationship to sustainable ways of living.

ART 1009. Fundamentals of Drawing. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Stimulation of visual and conceptual skills through dynamics of drawing as well as lectures/presentations and group discussions. Prereq: Not for art majors or minors.

ART 1010. Drawing I. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to the drawing experience and problems concerned with translation of three-dimensional visual experience into two-dimensional form. Prereq: Art or art education major or Theatre BFA, Costume Design or art minor or Graphic Design and Marketing or instructor consent.

ART 1011. 2-D Design. (3 cr.; A-F or Audit; Every Fall & Spring) Introduction to two-dimensional design through study of design elements and principles, including visual organization and color theory and their application in various media. Prereq: Art or art education major or pre GDM BFA, or GDM BFA or pre MGD BBA or MGD BFA or art minor or instructor consent; credit will not be granted if already received for ART 1002.

ART 1012. 3-D Design. (3 cr.; A-F or Audit; Every Fall & Spring) Introduction to basic concepts and materials of three-dimensional form and space. Prereq: Art or art education major or architecture and design studies minor or instructor consent.

ART 1013. 2-D Digital Design. (3 cr.; A-F or Audit; Every Fall & Spring) Two-dimensional studio and graphic design concepts using the computer as a creative tool. Laptop required; digital instruction presented only on the Mac platform. Prereq: Art or art education major or pre GDM BFA or GDM BFA or pre MGD BBA or MGD BBA or GIS major or Journalism major or art minor or photography minor or arts in media minor or instructor consent. Laptop required; digital instruction presented only on the Mac platform.

ART 1105. Fundamentals of Painting. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall) This course offers a hands-on opportunity to learn both traditional and contemporary painting techniques and to develop concepts for painting, while investigating the socio-economic, historical and personal motivations behind creative expression. Students will also be introduced to basic visual semiotic theory, which will help them understand the structure of visual communication. Students will develop their own ideas and styles through specifically designed assignments with targeted goals.

ART 1125. Watercolor I. (3 cr.; A-F or Audit; Every Fall & Spring) Basic concepts and techniques. Prereq: 1002 or 1010 or instructor consent.

ART 1126. Watercolor II. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Advanced concepts and techniques. Prereq: 1125 or instructor consent; credit will not be granted if already received for 1215.

ART 1305. Social Multiples: Availability and Circulation. (FINE ARTS; 3 cr.; A-F or Audit; Every Spring) A survey of the historical and contemporary uses of printed material to engage communities in political, cultural, and ethical conversation.

ART 1306. Fundamentals of Screenprinting. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Summer) Introduction to methods and material used for water-based screen-printing, which offers a simple and direct way of creating visual images from hand crafted or digital sources. The instruction of this course allows students to build upon basic concepts in order to develop more complex and personally meaningful work. Projects will include topics addressing social communication, personal motivations, collaborations, and non-traditional uses (i.e., installation or sculptural work). Includes additional information on theoretical, legal, cultural, and historical aspects of screen-printing. Prereq: Not for Art majors or minor.

ART 1405. Fundamentals of Ceramics I. (FINE ARTS; 3 cr.; A-F or Audit; Every Spring & Summer) Basic handbuilding and glazing of earthenware ceramics. Prereq: Not for art majors or minors.

ART 1605. Fundamentals of Photography. (FINE ARTS; 3 cr.; A-F or Audit; Every Spring & Summer) Introduction to photography and its roles in the communications culture. Basic photographic principles and introduction to digital darkroom. Assignments emphasize creative thinking. Requires digital camera with adjustable shutter speeds and apertures. Laptop and software required; instruction presented only on the Mac platform. Prereq: Not for art majors or minors.

ART 1814. Creating Across Cultures. (FINE ARTS, CDIVERSITY; 3 cr.; A-F or Audit; Every Spring) Underrepresented visual arts of cultural groups within U.S. society. Prereq: Credit will not be granted if already received for 2814.

ART 1900. Visual Literacy. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Various forms of visual expression—art, commercial imagery, typography, architecture, graffiti, etc.—as rhetoric. Introduction to variety of theories and/or modes of criticism, and consideration of their value for explanation of visual expression. Prereq: Credit will not be granted if already received for 2900.

ART 2014. 3-D Digital Studio I. (3 cr.; A-F or Audit; Every Fall & Spring) Introduction to design using 3-D digital applications, particularly for the creation of images for the purpose of artistic expression or for use as graphic elements. The class will cover use of the software as well as artistic and design issues raised by this particular medium. Prereq: 1013 and art or art education major, pre-art education major or pre-graphic design major, or art minor or architecture and design studies minor or instructor consent; credit will not be granted if already received for 1014 or 3014.

ART 2016. Digital Arts: Mixed-Media Studio. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Introduction to digital art studio practice with a focus on digital imaging and cross-media experimentation. Course builds on skills, techniques, and critique of digital art concepts such as image compositing, appropriation, collage, and remixing. Creative projects include development of a serial approach to visual imagery. Readings and presentations discuss current trends in digital culture and key works by digital artists. Mac laptop required with current digital imaging software. Prereq: 1013, art or art education major, pre-art education major or pre-graphic design major, or art or photography minor or instructor consent; credit will not be granted if already received for 3016.
ART 2030. Digital Arts: Time-based Media. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Introduction to time-based media practice and theory through presentations, readings, studio time, and hands-on assignments. Creative exploration of vital forms of contemporary time-based art such as video art, sound/sonic art, basic animation, and performance art. prereq: 1013, art or related majors or minors or instructor consent; credit will not be granted if already received for 3030

ART 2100. Painting I. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Color and pigment theory, basic concepts and explorations in technology and imagery. Painting traditions and contemporary directions. prereq: 1006 or 1009 or 1010, 1011, art or art education major or art minor or instructor consent; credit will not be granted if already received for 1100

ART 2200. Sculpture I. (3 cr.; A-F or Audit; Every Fall & Spring) Sculptural materials, methods, and concepts, with problems relating to form, time, and space; experience with various sculptural forms and media, emphasizing creative expression. prereq: 1015 or 1012, art or art education major or art minor or instructor consent; credit will not be granted if already received for 1200

ART 2301. Printmaking I: Litho, Screen. (3 cr.; A-F or Audit; Every Spring) Introduction to methods and materials used in lithographic printmaking from stones and plates and water-based screenprinting. Content includes technical, aesthetic and contextual considerations encountered in the production of meaningful artwork. Additional information on theoretical, legal, critical and historical aspects of printmaking. prereq: 1006 or 1009 or 1010, 1011, art or art education major or art minor or instructor consent; credit will not be granted if already received for 1301

ART 2303. Printmaking I: Screenprinting. (3 cr.; A-F or Audit; Periodic Summer) Introduction to methods and material used for water-based screen-printing, which offers a simple and direct way of creating visual images from hand crafter or digital sources. The instruction of this course allows students to build upon basic concepts in order to develop more complex and personally meaningful artwork. Projects will include topics addressing social communication, personal motivations, collaborations, and non-traditional uses (i.e., installation or sculptural work). Includes additional information on theoretical, legal, cultural, and historical aspects of screenprinting. prereq: 1009 or 1010, 1011, art or art education major or art minor or instructor consent

ART 2400. Ceramics I. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Handbuilding methods, surface enhancement, and conceptual support for pottery and/or ceramic sculpture. prereq: 1012, art or art education major or art minor or instructor consent; credit will not be granted if already received for 1400

ART 2500. Jewelry and Metals I. (3 cr.; A-F or Audit; Every Fall & Summer) Basic jewelry design, fabrication, and surface enhancement techniques. prereq: 1011 or 1013, art or art education major or art minor or instructor consent; credit will not be granted if already received for 1500

ART 2600. Photography I. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to photographic concepts, materials, and the digital darkroom. Varied thematic assignments within the visual arts context. Requires digital camera with adjustable shutter speeds and apertures. Laptop and software required; instruction presented only on the Mac OS. prereq: 1013, Art major or Art or Photography Minor or Arts in Media Minor or instructor consent; credit will not be granted if already received for ART 1600, 1605 or 1607

ART 2810. Art in Elementary Education. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Instructional problems relating to the growth and development of artistic expression in children. Studio experience relating to elementary art curriculum. prereq: pre-Elementary education major
and exhibition options for experimental digital video works; prereq: 2030 or 2040 or instructor consent

**ART 3100. Painting II.** (3 cr. [max 9 cr.]; A-F or Audit; Every Fall, Spring & Summer)

Painting in specialized interest area, using student/instructor-generated semester goals outline. prereq: 2100, art or art education major, pre-art education major or pre-graphic design major, or art minor or instructor consent; max 9 credits

**ART 3200. Sculpture II.** (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)

Sculptural materials, methods, and concepts, with problems relating to form, time, and space; experience with various sculptural forms and media, emphasizing creative expression. prereq: 2200, art or art education major or art minor or instructor consent

**ART 3214. Sculpture II: Robotics and Physical Computing.** (3 cr. [max 6 cr.]; A-F or Audit; Every Spring)

Intermediate and advanced sculpture robotics and physical computing: Approaches to sculpture, digital control of objects, kinetic sculpture and sound in installation events, performances, and exhibitions. prereq: 2200, art or art education major or art minor or instructor consent

**ART 3300. Printmaking II.** (3 cr. [max 6 cr.]; A-F or Audit; Every Spring)

Continued exploration of processes explored in either or both of the introductory courses. Increased technical challenges combined with refinement of image and concept. Some photographic and mixed-media processes; increased experience in editing and critical review. prereq: 2300, 2301, art or art education major or art minor or instructor consent

**ART 3305. Sustainability Studio: Theory and Practice.** (SUSTAIN; 3 cr.; A-F or Audit; Periodic Fall & Spring)

Within a studio-based context, this course examines the potential of art and design to address issues of sustainability. Drawing from historical and contemporary precedents, student will explore and analyze solutions to the interdependence and growing incongruity between the natural environment and societal demands. As a combined media course, students will use a range of technical and conceptual methods, synthesizing previously learned studio experience and skills, examining the potential of found, ready made, and/or recycled materials to fulfill sustainable challenges. prereq: minimum 60 credits, Art major

**ART 3400. Ceramics II.** (3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)

Advanced handbuilding and surface enhancement techniques; development of a stylistically consistent body of work. prereq: 2400 or instructor consent

**ART 3405. Fundamentals of Ceramics II.** (FINE ARTS; 3 cr. [max 6 cr.]; Student Option; Every Spring)

Handbuilding or wheel-throwing, glazing, and firing of ceramics. prereq: 1405 or instructor consent; not for art majors or minors

**ART 3425. Ceramics II Wheel Throwing.** (3 cr.; A-F or Audit; Every Fall & Spring)

Introduction to the potter's wheel and clay throwing techniques. Glazing and firing; surface work and enhancement, with conceptual support for pottery and sculptural clay forms. prereq: 2400, art or art education major or art minor or instructor consent

**ART 3500. Jewelry and Metals II.** (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Summer)

Advanced application of jewelry techniques and design. prereq: 2500, art or art education major or art minor or instructor consent

**ART 3600. Photography: Alternative Processes.** (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)

Continued experience with photographic concepts using alternative processes techniques applied within a creative context. Portfolio requirements are project-based. Fall semester will cover the basics of alternative process workflow using cyanotype chemistry in the darkroom. Spring semester will cover the basics of medium format film cameras, and the collaborative process as it related to photographic image making. Laptop and software required: instruction presented only on a Mac OS. prereq: 1013, 1607 or 2600, Art major or Art or Photography minor or instructor consent

**ART 3615. Photography: Inventoring with Light.** (3 cr.; A-F or Audit; Every Fall & Spring)

This course provides a working knowledge of studio lighting equipment and techniques as they apply to the creative production of still photographs and short digital videos. Students will incorporate these lighting techniques, as well as advanced digital image making skills, into their conceptual practice, demonstrating technical and aesthetic skills related to contemporary and historical practice in the art of artificial lighting. Students will conceptualize how the lighting studio can transform their models of creative production. Requires digital still and/or video camera/s with adjustable shutter speeds and apertures. Laptop and software required; instruction presented only on the Mas OS. prereq: 1013, 1607 or 2600, pre-ĐAP or Studio ĐAP major or Photography minor or instructor consent

**ART 3700. Drawing II.** (3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)

Individually supervised projects supporting involvement in other studio areas. prereq: 1006 or 1007 or 2010, art or art education major, pre-art education major or pre-graphic design major, or art minor or instructor consent

**ART 3715. Figure Drawing.** (3 cr.; A-F or Audit; Every Spring)

The study of the human form, its structures and movements related to aesthetic considerations. Intermediate and advanced issues include perspective, space, foreshortening, proportioning and appropriation for the purposes of approaching the figure as an expressive and conceptual tool of art making. prereq: 3700, art or art education or graphic design major or art minor or instructor consent

**ART 3809. Art in Elementary Education Methods.** (3 cr.; A-F or Audit; Every Spring)

Instructional problems based on the growth of artistic expression in children, philosophy of art education, and contemporary problems. Museum and multicultural based experiences are combined with outreach opportunities to develop inclusive elementary art curriculum and assessment. prereq: 0903, art education candidate

**ART 3811. Teacher as Artist: Postmodern Theory and Practice.** (3 cr.; A-F or Audit; Periodic Spring)

Experience the complex role of the teacher as artist in the postmodern classroom and studio. Focuses on building professional expertise in the field of art education, museum education and contemporary artistic practice. Students will plan for an exhibition of their work in Tweed Museum of Art. prereq: 0903, [3809 or 3810]. Art education major or instructor consent

**ART 3812. Nordic Art and Design in Sweden and Denmark.** (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Summer)

In this study abroad trip to Sweden and Denmark, students will explore a variety of artistic styles, media, practices, traditions, and innovations in Nordic Art from medieval to contemporary times. pre-req: minimum 30 credits, GPA of 2.5 or higher, department consent

**ART 3814. Digital Media in Art Education.** (3 cr.; A-F or Audit; Every Fall)

Theoretical and practical experiences with emerging visual technologies. Assignments will integrate contemporary pedagogical theories of visual culture and digital media in art education. Art projects will use the computer as a creative tool. prereq: Art education major or instructor consent

**ART 3815. Art in Secondary Education.** (3 cr.; A-F or Audit; Every Fall)

Nature and objectives of art programs in secondary school; content and methods. Development of secondary art curriculum and classroom site visits. prereq: 3811, art education majors only or instructor consent

**ART 3906. Emerging Media Design.** (3 cr.; A-F or Audit; Every Fall)

An introductory course using emerging media devices and applications to design solutions for the web. This includes learning the basics of HTML (Hyper Text Markup Language) and CSS (Cascading Style Sheets) in order to design web-based content. Using system thinking, marketing theory and a variety of methods to generate images and other visual content, designing for social media platforms will be explored. pre-req: 2906

**ART 3922. Graphic Design II.** (3 cr.; A-F or Audit; Every Fall)

Continuation of theory and practice of graphic design. Introduction to professional practices. Materials meaning, aesthetics, and practical use. prereq: 2911, graphic design major or GDM BFA or MGD BBA or instructor consent; laptop required; digital instruction presented only on the Mac platform.
ART 3933. Graphic Design III. (3 cr. ; A-F or Audit; Every Spring) Continuation of theory and practice of graphic design. Graphic design as an organizational and informative medium and as a purely aesthetic pursuit. prereq: 3922, graphic design major or GDM BFA or MGD BBA or instructor consent; laptop required; digital instruction presented only on the Mac platform.

ART 3937. Typography II. (3 cr. ; A-F or Audit; Every Spring) Advanced exploration of typography concepts and issues in screen and print media. prereq: 2907, 3922, graphic design major or GDM BFA or MGD BBA or instructor consent; laptop required; digital instruction presented only on the Mac platform.

ART 4016. Digital Arts: Advanced Projects. (3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall & Spring) Advanced Digital Arts Studio for students interested in exploring interdisciplinary or advanced projects using current or emerging technologies. Students develop self-directed focus and creative project goals. Advanced projects may concentrate on mixed-media print, time-based media, interactive media, installation art, or collaborative art formats. Students hone a body of digital artwork through research experimentation and critique. Laptop required. prereq: 3017 or 3018 or 3031 or instructor consent, no grad credit

ART 4040. Digital Filmmaking: Advanced Projects. (3 cr. [max 9 cr. ] ; A-F only; Every Fall & Spring) Advanced digital film projects in narrative, experimental animation, or documentary formats. Students develop a single ambitious project over the semester, defining their own approach and focus. Develop project pitch, including visual concept, production plans, and storyboards. Hone video production technique and digital video editing skills. Emphasis on collaboration and creative process from pre-production through final craft of short digital film for contemporary audience. prereq: 2040 or 3040 or instructor consent

ART 4091. Individual Study in Electronic Arts. (1-3 cr. ; A-F or Audit; Every Fall & Spring) Individually supervised projects in electronic arts media. prereq: 2014 or 3018, art or art education major and instructor consent

ART 4100. Painting III. (3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Advanced individually supervised projects using both traditional and contemporary painting media and techniques. prereq: 3100, art or art education major or art minor or instructor consent; no grad credit

ART 4191. Individual Study in Painting. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Instruction tailored to individual's needs outside of traditional class structure. prereq: Two semesters painting, instructor consent; no grad credit

ART 4200. Sculpture III. (3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall & Spring) Sculpture in area of specialized interest. prereq: 3200, art or art education major or art minor or instructor consent; no grad credit

ART 4291. Individual Study in Sculpture. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall & Spring) Individual study in sculpture. prereq: 2 semesters sculpture, instructor consent; no grad credit

ART 4300. Printmaking III. (3 cr. [max 6 cr. ] ; A-F or Audit; Every Spring) Further exploration of print processes. Emphasis on refinement of technical skills as well as development of concepts and imagery. Experimentation encouraged in nontraditional, collaborative, and cross-disciplinary approaches. Increased experience in editing and alternative formats combined with a more comprehensive critical review. prereq: 3300, art or art education major or art minor or instructor consent

ART 4391. Individual Study in Printmaking. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall & Spring) Graduate students complete a project by contract with instructor, supported by a research paper. prereq: 3300, department consent

ART 4400. Ceramics III. (3 cr. [max 6 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Technical and conceptual refinement of advanced body of ceramic work. prereq: 3400, art or art education major or art minor or instructor consent; no grad credit

ART 4491. Individual Study in Ceramics. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Directed study in specific areas. prereq: 2 semesters ceramics, department consent

ART 4600. Photography: Digital Portfolio. (3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Intensive digitally-based portfolio development in area of special interest. Selected readings in photographic theory and criticism. Graduate student book projects may concentrate on mixed media and as a purely aesthetic pursuit. Multiple-disciplinary approach to image making is encouraged. Laptop and software required; instruction presented only on the Mac OS. prereq: 1900, 1607 or 2600, art major or art or photography minor or instructor consent

ART 4650. Alternative Processes Portfolio. (3 cr. [max 9 cr. ] ; A-F only; Every Fall & Spring) Intensive portfolio development using alternative contemporary and historic photographic ideas and processes. Processes that may be explored are: cyanotype, salt prints, photo-polymer gravure, camera-less image capture, toy and home-made cameras. The processes explored are relative to the resources available in conjunction with student interest. Multi-disciplinary approach to image making is encouraged. Laptop and software required; instruction presented only on the Mac OS. prereq: 3600, art or art education major or photography minor or instructor consent

ART 4675. Photography: The Photographic Book. (3 cr. [max 9 cr. ] ; A-F only; Every Spring & Summer) Creation of one or more individual photographic books, with emphasis on effective sequencing of images and appropriate book form for the specific body of work. Selected readings in book arts relating to photography. Graduate student book projects are complemented by a related research project. Requires digital camera with adjustable shutter speeds and apertures. Laptop required; instruction presented only on the Mac OS. prereq: 4600, art major or photography minor or instructor consent

ART 4691. Individual Study in Photography. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Individually supervised projects supporting involvement in other studio areas. Graduate students produce a technically and conceptually sophisticated portfolio of drawing, supported by a research paper. prereq: 3700, art or art education major or art minor or instructor consent

ART 4791. Individual Study in Drawing. (1-3 cr. [max 9 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Graduate students complete a project in drawing by contract with instructor, supported by a research paper. prereq: 2 semesters of drawing, instructor consent

ART 4793. Intermedia Studio. (1-3 cr. [max 27 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Directed study emphasizing intermedia concerns. pre-req: 2 semesters work in each subject area with instructor consent; no grad credit

ART 4812. Senior Seminar. (3 cr. ; A-F or Audit; Every Fall & Spring) Current visual arts and design issues investigated through research, lectures, assigned readings, discussion, writing assignments, and presentations, prereq: Senior or instructor consent; no grad credit

ART 4813. Senior Seminar II: Studio Practice. (3 cr. ; A-F or Audit; Every Fall & Spring) Preparation for the emerging studio professional in such areas as documenting work, building an exhibition history, and arts-related employment opportunities, through lectures, presentations, discussion, assigned readings, writing assignments, and field experience. prereq: Senior or instructor consent, studio art-general major; no grad credit

ART 4897. Visual Culture Internship. (1-9 cr. ; A-F or Audit; Every Fall, Spring & Summer) For advanced students. Field research and experience working with arts programming, practice, or management in public or private
ART 4898. Art BA Senior Exhibition. (1 cr.; S-N only; Every Fall & Spring) Students, with faculty guidance, exhibit work in department display cases and work is reviewed by a 3-person committee, prerequisite: Senior Art BA major, department consent; no grad credit

ART 4899. Senior Presentation/Exhibition. (1 cr.; A-F or Audit; Every Fall & Spring) Students, singly or in pairs, plan/prepare/present under guidance of faculty/museum staff an exhibition of their work in Tweed Museum of Art or an approved alternative public venue. Prerequisite: Senior art major, instructor consent; no grad credit

ART 4903. Art Education Student Teaching Seminar. (1 cr.; A-F or Audit; Every Fall & Spring) For students currently student teaching in art (K-12). Students will share concerns and situations, suggestions, and gain group support. The seminar supplements the field experience and builds on issues of supervision, evaluation, professional development, and the culminating Standards of Effective Practice art education portfolio. Prerequisite: Art ed major and Educ 4500, EdSe 4600, EdEd 4650; concurrent registration is required; no grad credit

ART 4907. Motion Graphics. (1-3 cr.; A-F or Audit; Every Fall) Introduces aesthetics, mechanics, and meaning of motion graphics. Prerequisite: 2911 and graphic design major, or digital art and photography emphasis or Grad Student, or instructor consent; credit will not be granted if already received for 5909: laptop required; digital instruction presented only on the Mac platform.

ART 4908. Interactive Design I. (3 cr. [max. 6 cr.]; A-F or Audit; Every Spring) Interactivity in graphic design, concentrating on computer-based interactive presentations. Prerequisite: 3922 and graphic design major or GDM BFA or MGD BBA or digital art and photography emphasis or Grad Student, or instructor consent; credit will not be granted if already received for 5907: laptop required; digital instruction presented only on the Mac platform.

ART 4909. Interactive Design II. (3 cr. [max. 6 cr.]; A-F or Audit; Every Fall) Interactivity in graphic design, concentrating on computer-based interactive presentations. Prerequisite: 4908 and graphic design major, or digital art and photography emphasis or Grad Student, or instructor consent; credit will not be granted if already received for 5910: laptop required; digital instruction presented only on the Mac platform.

ART 4922. Senior Design Studio I. (3 cr. [max. 6 cr.]; A-F or Audit; Every Fall) Exploration of advanced graphic design topics through an extensive project for print and/or screen: research, creative production and development of a presentation system. Done individually or in groups. Prerequisite: 3933 or 3937 or instructor consent, no grad credit

ART 4933. Senior Design Studio II. (3 cr. [max. 6 cr.]; A-F or Audit; Every Fall & Spring) Professional presentation, portfolio development and professional practice. Prerequisite: 3933 or instructor consent

ART 4944. Graphic Design IV. (3 cr.; A-F or Audit; Every Fall) Continuation of theory and practice of graphic design. Research-based development of design systems in multiple media. Prerequisite: 3933; Graphic Design major or GDM BFA major or instructor consent; laptop required; digital instruction presented only on a Mac platform; no grad credit

ART 4955. Graphic Design V. (3 cr.; A-F or Audit; Every Spring) Continuation of theory and practice of graphic design. Advanced projects. Prerequisite: 3933; Graphic Design major or GDM BFA or instructor consent; laptop required; digital instruction presented only on a Mac platform; no grad credit

ART 4991. Independent Study in Graphic Design. (1-3 cr. [max. 9 cr.]; A-F or Audit; Every Fall, Spring & Summer) Independent work in graphic design. Prerequisite: 2 semester work in graphic design and graphic design major and instructor consent

ART 4997. Art Museum Internship. (1-3 cr.; A-F or Audit; Every Fall, Spring & Summer) Supervised practicum in art museum operation. Prerequisite: 1000. 6 credits of ARTH, 1 credit for each 45 hours of work; instructor consent

ARTH 1303. History of World Art I. (GLOBAL PER, HUMANITIES; 3 cr.; A-F or Audit; Every Fall) Development of world art and architecture from prehistory through Middle Ages.

ARTH 1304. History of World Art II. (HUMANITIES; 3 cr.; A-F or Audit; Every Spring) Development of world art and architecture from Renaissance to present.

ARTH 1305. Survey of Non-Western Art. (GLOBAL PER, HUMANITIES; 3 cr.; A-F or Audit; Every Fall) Survey of non-Western art examines the visual arts of the Americas, Asia, and Africa. This course aims to develop a critical understanding of art forms from non-Western cultures. We will examine a range of visual material including painting, sculpture, ceramics, and architecture, from prehistoric times to present. We will also examine the critical debates that frame the study of non-Western art.

ARTH 2380. A Global History of Contemporary Art. (3 cr.; A-F or Audit; Every Spring) This course maps the trajectories of art and design from the 1970’s to the present, paying close attention to: global movements; the terrains of the category called contemporary art; the modes through which globalization affects and challenges this terrain; and the role of art in world politics.

ARTH 2390. US Art and Visual Culture in the 20th Century. (HUMANITIES, CDIVERSITY; 3 cr.; A-F or Audit; Every Fall) This course offers an introduction to US art and visual culture - including architecture, painting, photography, sculpture, advertising, and performance art - from the 20th century, with some additional contextualization from the 19th century. More than simply offering a survey of stylistic changes over time, the class explores the social and political meanings of art. Students will acquire the tools necessary to analyze what art reveals about the nation’s values and beliefs. While offering students exposure to a range of issues that are of critical concern to American society, the course will pay particular attention to questions surrounding gender, race, and ideology.

ARTH 2620. History of Photography. (3 cr.; A-F or Audit; Every Spring) Conceptual and technical evolution of the photographic medium from its inception to the present, with special emphasis upon its development within art, design and new media contexts. Prerequisite: Art or Art Education major or Studio Art BA or Graphic Design BFA or Graphic Design & Marketing BFA or Photography minor or instructor consent

ARTH 2901. History of Graphic Design. (1-3 cr.; A-F or Audit; Every Spring) Introduction to the history of graphic design, from the origins of written communication to present. Graduate students complete a substantial research paper or project on a topic in consultation with the instructor. Prerequisite: Graphic Design major or Graphic Design and Marketing Major or Art History major or minor or Studio Art major or Digital Art and Photography minor or Arts in Media minor or instructor consent

ARTH 3110. Art of the Ancient Americas. (3 cr.; A-F or Audit; Fall Odd Year) A selective visual introduction to the Americas before the Spanish Conquest, focusing on the form, function, and symbolism of Ancient American art and architecture and its role in the construction and maintenance of political power, religious belief and practice, concepts of space, and bodily performance.

ARTH 3130. Modern and Contemporary Mexican Art. (3 cr.; A-F or Audit; Every Fall) This course focuses on modern and contemporary visual culture of Mexico from approximately 1860 to the present. It examines the dominant art forms of late nineteenth and twentieth century Mexico: these include post-revolutionary muralism and social realism;
movements, artists, and visual genre outside of the nationalist traditional; abstraction, surrealism, the international avant-garde, urban planning, photography, print culture, film, performance, and conceptual art.

ARTH 3140. Women in Art/Visual Culture in Latin America. (3 cr. ; A-F or Audit; Fall Even Year)
This course focuses on representations of women and by women in the art and visual culture of Mexico and other Latin American countries, examining the many ways in which the image of female body in Latin America has been used to construct and typify regional understandings of gender, class, racial, and national identities. Distinguishing between women as subject matter and women as producers of art, we will also look to female artists in the nineteenth, twentieth and twenty-first centuries to investigate how they might be engaging with and/or critiquing traditional iconographical representations.

ARTH 3150. Contemporary Global Exhibition. (3 cr. ; A-F or Audit; Every Spring)
This class will examine the transformation of art worlds and urban spaces by the development of contemporary global exhibitions, such as various Art Biennales now held around the globe, Art Basel, Documenta, and the Sculpture Projects Munster. In particular, we will examine how such exhibitions, as well as globalization in general, have transformed the way art is created, distributed, and received.

ARTH 3330. Renaissance Art & Architecture: Europe 1300 - 1550. (HUMANITIES; 3 cr. ; A-F or Audit; Spring Even Year)
Explores the art and architecture of Europe between 1300 and 1550. Focuses on issues central to understanding the period: relationship between patrons and artists, the changing status of the artist; the intersection of art and politics; representations of religious beliefs; and critical approaches to the study of artists and their oeuvre.

ARTH 3331. European Architecture and its Legacy. (3 cr. ; A-F or Audit; Fall Even Year)
Studies the history of architecture and the built environment in Europe from antiquity through 1800 by focusing on theoretical writings and representative building. In addition, the course will explore theories of spatial analysis and the legacy of western architecture into the present day.

ARTH 3340. Baroque and Rococo: European Art & Architecture 1550 - 1750. (3 cr. ; A-F or Audit; Fall Odd Year)
Explores the art and architecture produced in Europe during the Early Modern Period c. 1550 - c. 1750 (periods often referred to as the Baroque and Rococo). Includes study of canonical works and the artists that produced them; analysis of primary and secondary source materials, introduction to art historical methodologies; and consideration of the regional variations of the "baroque."

ARTH 3350. Art and Social Change in Europe, Russia, and the United States. (3 cr. ; A-F or Audit; Every Spring)
What is the relationship between artistic practice and politics? How do artists and their audiences engage with the visual in times of great social change? How do art and visual culture help us to engage with, understand, and change the world? This seminar offers weekly units that offer close examinations of major cultural moments of the modern and contemporary era, and range from the experimental and autonomous to the coercive and fascist. Topics will traverse Europe, Russia, and the United States from the 19th and into the 21st centuries. The exact content of the seminar may vary annually.

ARTH 3361. Being and Becoming Modern: European Art 1855 - 1955. (3 cr. ; A-F or Audit; Fall Even Year)
This seminar traces a history of art practice from the mid-19th to the mid-20th century across the European continent. It follows key movements and figures of modern art, while emphasizing the social, political, and philosophical events that inform them. Beginning with Realism, and ending at the beginning of the Cold War, this course is bracketed by important questions pertaining to the role of the artist in reflecting upon, critiquing, and influencing national and global culture, writ large. Throughout the term we will also look beyond the limited scope of the fine arts canon to the larger visual cultures that inform and disrupt its boundaries. The exact content of the seminar, including its time period, may vary annually.

ARTH 3370. Dreamworld and Catastrophe: Art and Visual Culture in the Cold War. (3 cr. ; A-F or Audit; Every Spring)
The Cold War marked a period of nearly five-decades of intense ideological, political, and economic division, which impacted all areas of the globe. This course examines art and visual culture across the period's two major world powers to demonstrate both fundamental discord as well as shared preoccupations. More than a study of the traditional geographies of the capitalist West and the communist East, this course offers insight into how the Cold War's globalization reached all areas of the globe, from the African continent to Latin America to Southeast Asia. A particular emphasis will be placed on experimental forms of culture, particularly in the late Cold War era.

ARTH 4330. Methods and Theories of Art History and Visual Studies. (3 cr. ; A-F or Audit; Fall Odd Year)
This seminar, an exit requirement for all Art History majors, introduces major issues of method and critique in the study of art and visual culture. It focuses on understanding disciplinary and critical modes of scholarly inquiry in the visual arts, including the role of historical research. The course emphasizes intensive reading, discussion, and writing. prereq: ARTH 3370 and Art History major.

ARTH 4691. Directed Study in the History of Photography. (3-4 cr. ; A-F only; Fall Odd, Spring Even Year)
Independent research in an area of the student's interest, culminating in a paper or project. Fundamental knowledge of subject required. Graduate student must complete a substantial research paper or project on a topic chosen in consultation with instructor prereq: instructor consent, concurrent registration in ARTH 4620 is not allowed

ARTH 4999. Senior Paper Art History. (1 cr. ; A-F or Audit; Every Fall & Spring)
Students write and/or revise a final paper demonstrating their competency in art historical research and writing. prereq: Major in ArtH with 90 credits, instructor consent, no grad credit

ARTH 5191. Directed Study in Ancient and Medieval Art. (1-3 cr. [max 9 cr.] ; A-F or Audit; Periodic Fall & Spring)
Independent research in an area of art history pertinent to the interests of the student. Fundamental knowledge of period or subject required. prereq: instructor consent; max 6 credits for undergraduates

ARTH 5391. Directed Study in Renaissance and Baroque Art. (1-3 cr. [max 9 cr.] ; A-F or Audit; Every Fall & Spring)
Independent research in an area of art history pertinent to the interests of the student. Fundamental knowledge of period or subject required. prereq: instructor consent; max 6 credits for undergraduates

ARTH 5591. Directed Study in American Art. (1-3 cr. ; max 9 cr.) ; A-F or Audit; Every Fall & Spring)
Independent research in an area of art history pertinent to the interests of the student. Fundamental knowledge of period or subject required. prereq: instructor consent; max 6 credits for undergraduates

Astronomy (AST)

AST 1040. Introductory Astronomy. (NAT SCI; 3 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Survey of present knowledge of solar system, interstellar space, stars, galaxies, and universe. Historical development of astronomy as a science. Taught in day school and in Individualized Learning Program format.

AST 1050. Native Skywatchers: Indigenous Ethno- and Archaeoastronomy. (CDIVERSITY; 3 cr. ; A-F or Audit; Every Fall)
Students are informed about the regional-historical, socio-cultural, philosophical and scientific-technical foundations of Turtle Island (American Indian) Indigenous astronomy in several contextual settings well enough to critically understand, in a conscientized manner, how to approach and address contemporary issues such as star knowledge preservation and transmission protocols, indigenous language and sacred site preservation, light pollution and dark sky preservation, telescope construction ethics and the implications for establishing and maintaining place-based, indigenous education standards in mainstream science at schools, universities, museums and parks.

AST 2040. The Solar System. (3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer)
Survey of terrestrial and jovian planets and their satellites; asteroids, comets, interplanetary debris; examination of lunar rocks and meteorite samples when available; origin and evolution of solar system. (3 cr. ; A-F or Audit; Fall Odd Year)

AST 2050. General Astronomy. (NAT SCI; 3 cr. ; A-F or Audit; Fall Odd Year)
An algebra-based introduction to astronomy with an emphasis on the physical principles underlying astronomical phenomena. Provides a physical and mathematical overview of the solar system, the nature and evolution of stars, galaxies, dark matter and dark energy, the large-scale structure of the Universe, the Big Bang and Inflation. Intended for students majoring in the physical sciences, engineering, or mathematics. pre-req: PHYS 1001 or 2013 or 2017

AST 3091. Independent Study. (1-3 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Directed readings and projects on topics not normally covered in other courses. pre-req: Instructor consent

AST 3094. Astronomical Research. (1-3 cr. ; max 6 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Supervised research in the laboratory or other setting pre-req: Instructor consent

AST 3561. Astrophysics. (3 cr. ; A-F or Audit; Spring Odd Year)
The application of physical laws and processes to the understanding of astrophysical objects: celestial mechanics, energy transport, stellar structure and evolution, the interstellar medium, stellar remnants, galactic structure and dynamics, large scale structure and cosmology. pre-req: PHYS 2021

AST 4110. Observational Astronomy. (3 cr. ; A-F or Audit; Fall Even Year)
Applied principles of astronomical observation; review of optical telescopes and mounts; locating and tracking objects; remote telescope operation, CCD, CMOS, and film astrophotography, astrometry, photometry, spectroscopy, astronomical image processing and analysis. pre-req: Phys 2015 or 2016 or instructor consent

BMS 5201. Principles of Neuroscience. (4 cr. ; A-F or Audit; Every Fall)
Principles of Neuroscience is an introductory course to general neuroscience that will review the organization and function of the nervous system, from its cellular constituents to circuits and the emerging properties of the brain. The course will start with a description of cell types, ion channels, neurotransmitters and their receptors, and the generation of action potentials. Then, we will review the development of the nervous system and the generation of circuits. Next, we will review each of the senses and how this sensory input is transformed into how we perceive the world. The next section will focus on the motor system, including central motor neurons, relaxes, and motor control in the basal ganglia and cerebellum. The last section will be dedicated to complex functions of the brain, including consciousness, emotion, memory, hemostasis, circadian rhythms, and how genes control behavior. Throughout the course, we will review neurological and psychiatric disorders and discuss the genetic and cellular bases of this perturbation. The course will also include the review of techniques in modern neuroscience and journal club of the review of controversial topics in modern neuroscience. pre-req: PSY 3621, PSY 3061 or BIOL 3100, can be co-enrolled in PSY 3621 or PSY 3061

BMS 5202. Cellular and Molecular Biology. (3 cr. ; A-F or Audit; Periodic Fall & Spring)
In-depth coverage of selected topics in cellular and molecular biology. Most topics will have been introduced in undergraduate courses. pre-req: Biol 2102 or Biol 2301 or Chem 4342 or instructor consent

BMS 5204. Pharmacology Seminar. (1 cr. ; [max 4 cr. ] ; A-F or Audit; Every Fall & Spring)
Presentation of selected research problems and current journal articles. pre-req: Grad student, instructor consent

BHSC 4962. Introduction to Pharmacology. (2 cr. ; : A-F or Audit; Every Spring)
Elementary course in pharmacology. Actions and use of drugs in selected health conditions. pre-req: 5601 or 3011 or equivalent

Behavioral Sciences (BHSC)

BHSC 5432. Clinical Psychopharmacology. (3 cr. ; : Student Option; Every Spring)
Clinical application of pharmacological principles; overview of major psychological disorders, such as depression, anxiety, psychosis, ADHD, substance abuse, and sleep disorders; appropriate treatments of psychological disorders with psychotropic medications. Clinical guidelines for psychotropic drugs.

BHSC 5491. Problems in Medical Behavioral Sciences. (1-6 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Independent study on a tutorial, seminar, or lecture basis. Investigative work, lecture material, and/or appropriate reading and discussions designed according to interest and capabilities of individual student. pre-req: Med or upper div or Grad Student, instructor consent; max 6 cr to grad program

BHSC 5591. Social and Behavioral Medicine II. (4 cr. ; P-N only; Every Fall)
Selectives on topics in general medical behavioral science, typically including women's mental health issues, chronic pain, socialization into medicine, aging, hypnosis and others. pre-req: Registered med student, instructor consent

BHSC 6652. Social and Behavioral Medicine II. (4 cr. ; P-N only; Every Spring)
Human psychological development throughout life; normal cognitive, learning, social, and personality development; problems expressed during various stages of life in the family and other settings. Assessment/treatment described as relevant to practice of family medicine. pre-req: Regis med student

BioMedical Sciences (BMS)

BMS 3011. General Physiology. (4 cr. ; A-F or Audit; Every Spring)
Lectures and demonstrations illustrate key aspects of function and mechanisms of action of major organ systems. Primarily for students preparing for nursing, dental hygiene, pre-professional programs, communication disorders, life science teaching, majors in natural sciences. pre-req: Biol 1761 or Chem 1102 or instructor consent

BMS 3194. Biochemistry Undergraduate Research. (1-3 cr. ; : S-N or Audit; Every Fall, Spring & Summer)
Laboratory experience in biochemistry and molecular biology research. pre-req: instructor consent

BMS 4094. Directed Research in Pharmacology I. (1-10 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Directed Research in Pharmacology pre-req: Upper div sci major, instructor consent

BMS 5001. Introduction to Pharmacology. (2 cr. ; : A-F only; Every Spring)
Elementary course in pharmacology. Actions and use of drugs in selected health conditions. pre-req: 5601 or 3011 or equivalent
BMS 5501. Neurobiochemistry. (2 cr.; A-F or Audit; Every Spring)
Current concepts on anatomical and compositional properties of brain; membranes and transport; neurotransmission; receptors and signal transduction mechanisms; energy, carbohydrate, protein, lipid, and nucleic acid metabolism; development and diseases of the central nervous system. prereq: Chem 3322 or Chem 4351 or instructor consent

BMS 5545. Immunology. (3 cr.; A-F or Audit; Every Fall)
The immune system including the cells and molecules which work cooperatively to resist disease and aberrations resulting in immune disorders. prereq: department consent

BMS 5546. Immunopathology. (3 cr.; A-F or Audit; Every Spring)
A rigorous analysis of the immune-defense mechanisms in disease processes, including infection, inflammation and autoimmune diseases utilizing the Problem-Based Learning method to address the selected content and to study current technical literature. prereq: 5545, instructor consent

BMS 5555. Molecular Pathogenesis: Current Concepts. (3 cr.; A-F or Audit; Spring Even Year)
Study of current discoveries in microbial pathogenesis and the molecular techniques used in elucidating pathogenic mechanisms of viral, bacterial and parasitic agents. A survey of current literature related to human infectious disease including malignant transformation. prereq: Biol 2201 or equivalent, Biol 4501 or equivalent or instructor consent

BMS 5591. Problems in Medical Microbiology and Immunology. (1-4 cr. [max 8 cr.]; Student Option; Every Fall, Spring & Summer)
Independent study on tutorial basis. Emphasis on basic and clinical microbiology problems, including immunology. Investigative work and appropriate reading arranged with tutorials consistent with interests and capabilities of individual students. prereq: Open to med students or qualified upper division and grad students with instructor consent

BMS 5601. Physiology of Organ Systems I. (4 cr.; A-F or Audit; Every Fall)
Survey of physiological functions and interrelationships of organ systems in mammals (musculoskeletal, cardiovascular, renal, respiratory, nervous, endocrine, and reproductive). Framework for understanding physiological processes, allowing students to integrate knowledge gained at molecular level with functions of whole organism. prereq: Biol 2101 or Biol 2201 or Chem 3322 or 4341 or instructor consent

BMS 5602. Physiology of Organ Systems II. (2 cr.; A-F or Audit; Every Fall)
Advanced study of organ system functions in context of interaction of organism with environment. prereq: 5601 or instructor consent

BMS 8151. Journal Club. (1 cr. [max 2 cr.]; S-N or Audit; Every Fall & Spring)
Journal Club provides students the opportunity to explore current topics and evidence-based clinical information relevant to medicine and its subspecialties. prereq: Graduate Student or Med Student

BMS 8294. Current Research Techniques. (1-3 cr. [max 12 cr.]; S-N or Audit; Every Fall, Spring & Summer)
The course provides students an opportunity to be involved with current research. Students will be involved in particular areas of strength with a focus across the Medical School. Students help in finding solutions to an existing project or shedding light on an unknown domain of knowledge. Students will collaborate as a team with other researchers. prereq: Biochemistry, Chemistry or Medical Graduate Student, instructor consent

BMS 8333. FTE: Master's. (1 cr.; No Grade Associated; Every Fall & Spring)
(No description) prereq: Master's student, adviser and DGS consent

BMS 8401. Physiology of Aging. (2 cr.; Student Option; Every Fall & Spring)
In-depth study of several theories concerning physiological processes that appear to set the limits of maximum human life span. prereq: 5601, instructor consent

BMS 8405. Muscle Physiology. (2 cr.; A-F or Audit; Every Fall & Spring)
In-depth review and discussion of physiological processes involved in muscle contraction from subcellular events to neural-controlled function of whole muscle (skeletal, cardiac, and smooth muscle). prereq: 5601, instructor consent

BMS 8415. Special Topics: (Various Titles to be Assigned). (2 cr.; Student Option; Every Fall & Spring)
Selected topics of current endocrine research interest examined in depth; historical background, questions posed by current research, and implications of current research for future development in the area. prereq: 5601, instructor consent

BMS 8441. Transport Processes. (2 cr.; Student Option; Every Fall & Spring)
In-depth, quantitative approach to transport processes in biological systems. prereq: 5601, instructor consent

BMS 8444. FTE: Doctoral. (1 cr.; No Grade Associated; Every Fall & Spring)
(No description) prereq: Doctoral student, adviser and DGS consent

BMS 8554. Advanced Immunology and Immunobiology. (2 cr.; A-F or Audit; Every Spring)
Detailed study of mechanisms involved in immunologic defense. Emphasis on concepts and current literature. prereq: 5545 or instructor consent

BMS 8666. Doctoral Pre-Thesis Credits. (1-6 cr. [max 12 cr.]; No Grade Associated; Every Fall, Spring & Summer)
(No description) prereq: Max 6 cr per semester or summer; doctoral student who has not passed prelim oral; no required consent for the first two registrations up to 12 cr; departmental consent for the third and fourth registrations up to an additional 12 cr, or 24 cr total (for doctoral students admitted summer 2007 and beyond; doctoral students admitted prior to summer 2007 may register up to 4 times totaling 60 cr)

BMS 8777. Thesis Credits: Master's. (1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall & Spring)
(No description) prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

BMS 8888. Thesis Credits: Doctoral. (1-24 cr. [max 100 cr.]; No Grade Associated; Every Fall & Spring)
(No description) prereq: Max 18 cr per semester

Biology (BIOL)

BIOL 1001. Biology and Society. (NAT SCI, SUSTAIN; 4 cr.; A-F or Audit; Every Fall & Spring)
This course covers basic biology as it pertains to contemporary issues. Biology coverage includes cell biology, genetics, evolution and ecology. In addition to helping students understand biology, students will learn to more critically evaluate science that is presented in the media. (3 hrs lect, 2 hrs lab) prereq: For nonmajors

BIOL 1011. General Biology I. (NAT SCI; 5 cr.; A-F or Audit; Every Fall & Spring)
Fundamental concepts of biology, including chemical basis of life, cell structure and function, energy transformations, photosynthesis, cellular respiration, genetics, molecular biology, DNA technology, development, origin of life, and evolution. (4 hrs lect, 2.5 hrs lab) prereq: 1 yr high school Chem or 1 semester college Chem, Math ACT 21 or higher or MATH 1005 or higher; credit will not be granted if already received for BIOL 1013

BIOL 1012. General Biology II. (SUSTAIN; 5 cr.; A-F or Audit; Every Fall & Spring)
Fundamental concepts of biology, including classification and diversity of life, anatomy, physiology, and development of prokaryotes, protists, fungi, animals, and plants; behavior; population, community, and ecosystem ecology. (4 hrs lect, 2.5 hrs lab) prereq: A grade of C- or better in 1011

BIOL 1087. Freshman Seminar: Darwinian Medicine. (NAT SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Darwinian medicine integrates evolutionary explanations into understanding human vulnerabilities to disease. This course introduces principles of evolution including natural selection, adaptation and phylogeny within Darwinian medicine's major subject categories: defenses, infection, novel environments, genes, design compromises, and evolutionary legacies. prereq: Freshman, fewer than 30 credits

BIOL 2001. Our Food: Science and Production. (NAT SCI, SUSTAIN; 3 cr.; A-F or Audit; Every Fall)
This course will examine 3 large aspects of the food we eat: food science, human nutrition,
and agricultural production methods. We will look at the main components of food, and how manipulation of food molecules creates different flavors, textures, and structures. We will then focus on the relative nutritional value of different foods and their effects on the human body, including illnesses related to poor nutrition. Finally, we will explore modern agricultural practices and discuss ways to enhance stability and sustainability in our food supply. pre-req: minimum 30 credits

BIOL 2095. Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 8 cr.]; Student Option; Periodic Fall & Spring) Special topics in Biology

BIOL 2102. Cell Biology Laboratory. (2 cr.; A-F or Audit; Every Spring) Writing intensive course using contemporary cell biology research techniques, hypothesis testing and communication of results. pre-req: A grade of C- or better in both 1011 and 1012 or 1013, concurrent registration is allowed for 3100 or 2110

BIOL 2110. Cell and Molecular Biology. (3 cr.; A-F or Audit; Every Spring) Introduction to the basic principles of the structure and function of cells including protein and nucleic acids, and the molecular basis of gene expression including transcription, translation and regulation in both prokaryotes and eukaryotes. pre-req: BIOL 2201 with a grade of C- or better; credit will not be granted if already received for BIOL 2101 or 3100.

BIOL 2201. Genetics. (3 cr.; A-F or Audit; Every Fall & Spring) Basic principles of Mendelian inheritance, molecular genetics, chromosomal aberrations, and population genetics. (3 hrs lect) pre-req: A grade of C- or better in both 1011 and 1012, 1114 or CHEM 1155 or CHEM 1175; may be taken without lab BIOL 2202

BIOL 2202. Genetics Laboratory. (2 cr.; A-F only; Every Fall & Spring) Writing intensive course that uses an array of experimental approaches to gain understanding of the principles of genetics. pre-req: A grade of C- or better in 1011, 1012 and 2201 (concurrent registration is allowed for 2201)

BIOL 2401. Evolution in England. (NAT SCI; 4 cr.; A-F or Audit; Every Summer) Evolutionary Biology is a cornerstone of modern science, and since its introduction by Charles Darwin over 150 years ago it has produced a dramatic paradigm shift in how humans view themselves and all life on this planet. We will explore the history of evolutionary theory from both an "internalist: perspective and an "externalist" perspective. We will review scientific evidence for evolution and will particularly focus upon the explosion of insights provided by Molecular Biology in the past 20 years. Past and current social implications will be discussed as well as modern evolutionary challenges like drug-resistant infectious diseases, genetic modification of crops, and dwindling biodiversity. The course will be taught onsite at locations relevant to the history of evolution and examined in the cultural context of Regency and Victorian England in which the theory was first formed. This course is for non-majors and cannot be used towards the Biology B.A. electives. pre-req: high school biology course, instructor consent

BIOL 2410. Ecology and Evolution. (3 cr.; A-F or Audit; Every Fall) Introduction to Darwinian biology and the complexity and connections of life. Topics include: genes in populations; natural selection, molecular and macroevolution, foundation ecological principles, ecological interactions, population and community ecology. pre-req: BIOL 2201 with a grade of C- or better; credit will not be granted if already received for BIOL 3802 or 4801 or 4802

BIOL 2571. Microbiology for Human Health. (4 cr.; A-F or Audit; Every Fall) This course will introduce students to the microbial issues they will face as health care professionals. We will cover the basic science of microorganisms primarily bacteria, viruses, and fungi. We will examine the impacts of these microbes on patient health, of microbial infections, modes of preventative care, and how the human immune response protects the body against infection and disease. This course cannot be used for upper division credit for BA or BS majors in the Biology Department. 3 hours lecture and 2 hours lab pre-req: BIOL 1011 and 1012; credit will not be granted if already received for BIOL 3502 or 4501; This course cannot be used for Biology majors to fulfill biology elective credit except in the Biology BA Human Biology track.

BIOL 2801. General Ecology. (3 cr.; A-F or Audit; Every Fall & Spring) Relationships between life and environment for individuals, populations, communities, and ecosystems; surveys of environmental factors and biomes. May be taken without lab BIOL 2802. (3 hrs lect) pre-req: A grade of C- or better in both 1011 and 1012; may be taken without lab BIOL 2802

BIOL 2802. Ecology Laboratory. (2 cr.; A-F or Audit; Every Fall & Spring) Writing-intensive course that introduces sampling, data analysis and interpretation, hypothesis testing, ethical considerations in scientific practice. Includes field studies (4 hrs lab) pre-req: A grade of C- or better in 1011, 1012 and 2801, concurrent enrollment is allowed in 2801

BIOL 3001. Outreach to the K-12 Science Classroom. (3 cr.; A-F or Audit; Every Spring) Undergraduates in this course will work with K-12 teacher partners to develop new hands-on science projects that will improve the opportunities for K-12 school students to do experimental science and learn about the biological sciences. pre-req: 2201 and instructor consent

BIOL 3011. Writing for the Duluth Journal of Undergraduate Biology. (3 cr. [max 6 cr.]; A-F or Audit; Every Spring) This course is for the contributors and editors of the Duluth Journal of Undergraduate Biology. Students in this course produce, edit, and peer review manuscripts to be considered for publication in the Duluth Journal of Undergraduate Biology. The course will include the study and practice of writing tasks in science, as well as making scientific posters and oral presentations. Students will explore rhetorical situations in professional practice, research methods, document design, editing, effective collaboration, and ethical issues in the production of professional documents. pre-req: BIOL 1012 and BIOL 1011 or 1013, minimum 60 credits and instruction consent

BIOL 3094. Experimental Biology. (2 cr.; A-F or Audit; Periodic Fall) Students taking this course will be able to get hands-on experiences with research techniques. Importantly, this will give students not able to join a research laboratory the opportunity to do original research. In this course, students will be able to build more advanced research techniques that are not accessible in more conventional laboratory courses. Along with gaining advanced research techniques, students will improve their ability to find and interpret relevant primary research articles, as well as improve their science presentation skills through writing and oral presentations. Students will typically work in small groups to test a hypothesis, and so this course will also provide experience in working as part of a scientific team. pre-req: BIOL 2102 or 2202

BIOL 3100. Cell Biology. (3 cr.; A-F or Audit; Every Fall & Spring) Structure and function of prokaryotic and eukaryotic cells. Topics include membranes and membrane trafficking, cytoskeleton, signal transduction, cell cycle regulation and experimental methods used in cell studies. Examples will come from all phyla of life. (3 hrs lect) pre-req: A grade of C- or better in BIOL 1011 or 1013, 2201, CHEM 1152 or 1162 or 1155 and 1156 or 1175 and 1176; may be taken without lab BIOL 2102; credit will not be granted if already received for BIOL 2101

BIOL 3101. Molecular Biology of Cancer. (3 cr.; A-F or Audit; Every Summer) Overview of mechanisms underlying the development of human cancer. Topics include intracellular signaling systems including oncogenes and tumor suppressors, cell cycle, tumorigenesis, multi-step carcinogenesis, invasion and metastasis and genetic instability in cancer. The detection and modern treatment of cancer will also be discussed. pre-req: 2101 or 2110 or 3100

BIOL 3102. Cell Biology of Human Disease. (3 cr.; A-F or Audit; Summer Even Year) Topics in human cellular biology as related to human diseases. A focus on learning to read primary literature and critically analyze and communicate scientific ideas. pre-req: 2101 or 2110 or 3100

BIOL 3301. Pattern the Embryo. (3 cr.; A-F or Audit; Every Fall) Important topics in developmental biology from the historical literature up to recent presentations with focus on learning how to read and critically analyze primary literature.
and how to communicate ideas in written and oral scientific presentations. prerequisite: 1011, 1012, Min 60 cr

BIOL 3401. Evolution. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall & Spring) Origin, history, opposition, and evidence supporting evolutionary ideas. Basic concepts: origin of life, phylogeny, biological history, mechanisms of evolutionary change, population genetics, speciation, tempo of evolution, macroevolution, extinction, biogeography, evolution of social systems, altruism. (3 hours lecture) prerequisite: A grade of C- or better in all of the following Biology courses 1011, 1012, 2201 or IBS Grad student; credits will not be granted if already received for 3802, 4801 or 4802.

BIOL 3402. Evolution in the news. (1 cr.; A-F or Audit; Every Fall & Spring) This one credit course is designed to be taken concurrently with or after having completed Evolution BIOL 3401. This companion to the core Evolution course will provide opportunities for students to read and discuss the primary literature in evolutionary biology that is ripped from the headlines of leading journals or has received attention in the popular press. prerequisite: BIOL 3401 previous concurrent.

BIOL 3502. General Microbiology. (4 cr.; A-F or Audit; Periodic Fall & Spring) Morphology of microorganisms; growth; environmental and physiological types; physical and chemical control; taxonomy; viruses; genetics of bacteria; practical applications, including medical, water, soil, and food microbiology. (2 hours lecture, 4 hours lab) prerequisite: BIOL 2201 or IBS Grad student.

BIOL 3512. Biology of HIV and AIDS. (3 cr.; A-F or Audit; Every Summer) A comprehensive overview of the current AIDS pandemic ranging from molecular and biomedical aspects to societal and psychological aspects. Molecular biology of HIV, the immune system's response, diagnosis, prevention, treatment, and social implications will be discussed. prerequisite: 1012; credits will not be granted if already received for BIOL 2512.

BIOL 3601. Plant Diversity. (3 cr.; A-F or Audit; Every Fall) Evolutionary survey of plants, focusing on diversity of life histories and patterns of organization. Fossil and extant groups, including algae, fungi and nonvascular and vascular land plants. (2 hours lecture, 3 hours lab, field trip) prerequisite: 1012.

BIOL 3603. Plant Taxonomy. (3 cr.; A-F or Audit; Every Spring) Introduction to taxonomy of vascular plants, emphasizing seed plants; representative families; terminology; literature; use of keys. (2 hours lecture, 2 hours lab) prerequisite: 1012.

BIOL 3701. Animal Diversity. (4 cr.; A-F or Audit; Every Spring) Survey of major animal phyla, focusing on phylogeny, anatomy, physiology, and ontogeny. (2 hours lecture, 4 hours lab) prerequisite: 1012.

BIOL 3703. Animal Physiology. (3 cr.; A-F or Audit; Every Fall) Examination of principles, patterns, and mechanisms of biological function from the level of cells and tissues to the whole animal. Primary focus on comparative vertebrate physiology. (2 hours lecture, 2 hours lab) prerequisite: 1011, 1012, one semester college chemistry.

BIOL 3760. Marine Biology. (3 cr.; A-F only; Spring Even Year) A multidisciplinary approach will be used to explore the diverse ecosystems of the marine realm. Emphasis will be on the ecological and physiological adaptations that have allowed animals to colonize habitats ranging from the intertidal zone to the abyss. prerequisite: 1011, 1012.

BIOL 3761. Field Studies in Marine Biology. (4 cr.; [max 8 cr.]; A-F or Audit; Periodic Summer) Introduction to the marine environment by visiting either US i.e. Friday Harbor, WAS or MBL, Woods Hole, MA) or International (i.e. Leigh, New Zealand) marine lab and conducting both laboratory and field research. Topics include ecology, animal physiology, animal behavior, ichthyology and fisheries biology. Lectures will precede daily field trips where students will make in situ measurements and/or bring specimens back to the laboratory for study. prerequisite: 1011 or instructor consent; Course may only be repeated if location is different.

BIOL 3771. Human Anatomy. (4 cr.; A-F or Audit; Every Fall) Human anatomical form and function. Lectures cover the structure and function of the major body systems. Topics include tissue types, organs, and organ systems, including the integumentary, skeletal, articular, muscular, nervous, respiratory, digestive, cardiovascular, urinary and reproductive systems in the context of the science of biology. The lecture material is reinforced through observations of microscope slides, anatomical models and charts, and the dissection of a cat and sheep organs and observations of human cadavers. Suitable for biology majors/minors and pre-professional students interested in entering health related professions. Provides (2 hours lecture, 4 hours lab) prerequisite: 1011, 1012; credit will not be granted if already received for 1761 or 2769.

BIOL 3772. Human Physiology. (4 cr.; A-F or Audit; Every Spring) Integrative study of major human organ systems including cardiovascular, muscle, respiratory, gastrointestinal, renal physiology and quantitative aspects of physiology. Examination of principles, patterns, and mechanisms regulating and maintaining homeostasis in normal human physiological processes from the level of cells and tissues to the whole animal. Suitable for biology majors and pre-professional students interested in entering health related professions. (3 hours lecture, 3 hours lab) prerequisite: C- or better in BIOL 3771 or 2769, CHEM 1114 or 1155 or 1175 or equivalent full year of college chemistry, MATH 1250 or above.

BIOL 3811. Plant Ecology. (4 cr.; A-F or Audit; Periodic Spring) Plant ecology is the study of interactions between plants and their biotic and abiotic environments. In this course, we will study the fundamental concepts of vascular plant ecology, beginning with autecology, continuing through population and community ecology, and touching on ecosystem ecology and on the complex and interesting interactions between humans and plants. Weekly discussions will include current important plant ecology topics. The accompanying lab will cover basic field methods used in plant ecology, reading and interpreting primary literature, running and interpreting statistical tests, designing and carrying out an experiment, and writing a formal scientific research paper. Altogether, this course will leave students with a better understanding of plants and their ecology, as well as the mechanics of completing plant ecology research. prerequisite: 2801.

BIOL 3830. Aquatic Food Webs. (3 cr.; A-F or Audit; Periodic Summer) Classic and modern topics in aquatic food web ecology including biogeography, predator-prey interactions, competition, life-history strategies, and energy flow. Emphasis on phytoplankton, zooplankton, fish, and macroinvertebrates. Instruction includes lectures, field and laboratory exercises, and reading and discussion. prerequisite: 1012.

BIOL 3835. Freshwater Ecology. (3 cr.; A-F or Audit; Spring Even Year) Exploration of freshwaters habitats and their biological diversity with emphasis on how human behavior is affecting those habitats and biodiversity. prerequisite: 2801 or concurrent.

BIOL 3897. Communication in Biology. (2 cr.; A-F only; Every Fall & Spring) Develop professional oral communication skills through the attendance and evaluation of biological science public seminars, the construction and presentation of a professional public seminar, and the introduction of a student seminar speaker. prerequisite: Minimum 90 credits, Biology or Cell and Molecular Biology major; credit will not be granted if already received for 3997 AND 3998.

BIOL 3990. Special Topics: (Various Titles to be Assigned). (1-5 cr.; Student Option; Periodic Fall, Spring & Summer) Specific topics submitted for biology department review. Topic announced before course offered. prerequisite: 1012.

BIOL 3993. Laboratory Teaching Experience. (1-2 cr.; S-N or Audit; Every Fall, Spring & Summer) Participation in teaching biology lab courses; help set up labs, participate in teaching of labs, and share in instruction of review labs. prerequisite: instructor consent required, Biol or cell Biol major, 90 cr incl 25 cr Biol; max 2 cr may be applied toward Biol major.

BIOL 3994. Undergraduate Research. (1-3 cr.; [max 6 cr.]; S-N or Audit; Every Fall, Spring & Summer) Advanced independent work in special fields. prerequisite: A grade of C or better in both 1011 and 1012, 60 cr, department consent required; max
4 cr may be applied to biol or cell biol major as upper div elective

BIOL 3996. Internship in Biology. (1-2 cr.; S-N or Audit; Every Fall, Spring & Summer) Credit given for professional work experience outside an academic department. Requires prior department approval and coordination with faculty sponsor. prereq: A grade of C- or better in both 1011 and 1012, department consent required; max 1 cr may be applied to biol or cell biol major

BIOL 4199. Frontiers in Cell Biology. (3 cr.; A-F or Audit; Fall Odd Year) Analysis and discussion of current literature and topics. prereq: 2201 and 3100; credit will not be granted if already received for 5199

BIOL 4201. Leverage bioinformatic tools to manage big data and answer primary biology questions. (3 cr.; A-F or Audit; Periodic Fall & Spring) Biology has moved into a new era of big data, especially in the field of genomics. This course will introduce basic principles of bioinformatics and how to apply bioinformatic tools to process large genomic datasets. This course will emphasize how to evaluate currently available software, implement software, build pipelines for analysis, interpret outputs, apply statistics and finally produce publication appropriate figures. pre-req: BIOL 2201, no grad credit

BIOL 4231. Molecular Biology. (3 cr.; A-F only; Every Spring) Contemporary molecular biology techniques, linkage analysis, mutation, DNA repair and recombination, genetics of viruses and bacteria, transposable genetic elements, genetics of mitochondria and chloroplasts, genomics, genetic control of animal development and the vertebrate immune system. (3 hours lecture) prereq: BIOL 2201, BIOL 2101 or 3100, CHEM 3322 or CHEM 4351 (concurrent registration is allow for BIOL 3322) or IBS Grad student; credit will not be granted if already received for 5231

BIOL 4233. Genomics. (3 cr.; A-F or Audit; Every Spring) A survey of current research in genome structure and evolution, and some of the bioinformatics tools used to analyze genomic data; topics include genomic data collection, gene and genome duplication, transposable elements, comparative and functional genomics prereq: 3802 or IBS grad student; credit will not be granted if already received for 5231

BIOL 4361. Developmental Biology. (3 cr.; A-F or Audit; Every Spring) Molecular and cellular mechanisms of development, emphasizing animal systems and including cell cycle, gametogenesis, fertilization, morphogenetic movements, differentiation of cell types, cell-cell interactions, pattern formation, gene expression, organogenesis, metamorphosis, regeneration, and aging. (2 hrs lect, 3 hrs lab) prereq: 2201 and (2101 or 2110 or 3100) or IBS Grad student; credit will not be granted if already received for 5361

BIOL 4511. Medical Microbiology. (3 cr.; A-F or Audit; Every Fall) Overview of the dynamic relationships between human hosts and pathogenic microbes. Topics include the human immune system, antimicrobial therapy, pathogenic bacteria, viruses, and pathogenic eukaryotic species. prereq: 3502 or 4501

BIOL 4604. Plant Physiology. (4 cr.; A-F or Audit; Every Spring) Mechanisms underlying plant function, growth and development: metabolism, water relations, mineral nutrition, transport, internal and external regulators of growth and development, stress physiology, biotechnology. Lab exercises evaluate physiological processes that enable plants to grow under varied conditions found in nature, such as water relations, mineral nutrition, metabolism, growth and development. prereq: 2201 and 1 year college chemistry or IBS grad student

BIOL 4631. Plant Cell and Molecular Biology. (3 cr.; A-F or Audit; Periodic Fall & Spring) Molecular processes and structures unique to plant cells; methods for the study of plant cells, genes and genomes. Structure and function of plant-specific organelles, endomembrane trafficking, cellular responses to biotic and abiotic stress, signal transduction, plant biochemistry and biotechnology. prereq: 2101, 2201 or IBS Grad Student

BIOL 4731. Entomology. (3 cr.; A-F or Audit; Periodic Fall & Spring) Structure, life history, ecology, classification, evolution, principles of control, and significance of insects in our society. Field collections. (2 hrs lect, 3 hrs lab and field) prereq: 1012 or IBS Grad student

BIOL 4761. Ichthyology. (3 cr.; A-F or Audit; Periodic Fall & Spring) Physiologic, taxonomic, ecologic, economic, and behavioral aspects of fishes. Lab emphasis on fishes of Great Lakes region, including field conducted independent study. (2 hrs lect, 3 hrs lab, field) prereq: 2801 or IBS Grad student

BIOL 4763. Ornithology. (3 cr.; A-F or Audit; Periodic Spring) Lab and field identification of birds, their migration and habitats; biologic, taxonomic, and economic considerations. (2 hours lecture, 2 hours lab and field) prereq: 2801 or IBS Grad student

BIOL 4764. Mammalogy. (3 cr.; A-F or Audit; Periodic Fall) Origin, taxonomy, distribution, physiology, ecology and behavior of mammals. Laboratory and fieldwork includes collection, preparation and identification of Minnesota species. (2 hrs lecture, 3 hours lab, field) prereq: 2801 or IBS Grad student

BIOL 4818. Biotic Response to Climate Change. (3 cr.; A-F or Audit; Periodic Spring) Many species are already responding to climate change, as evidenced by earlier budburst, flowering, and arrival of insect and bird pollinators. In only a few cases can we distinguish between phenotypic responses to longer growing seasons and warmer temperatures (plasticity) and evolutionary change in response to altered patterns of natural selection. Climate change will pose strong evolutionary challenges to native populations. In this course we will explore the fundamental response of the biota to these changes: extinction, migration, and adaptation. prereq: Biol 2201, no grad credit

BIOL 4839. Coral Reef Field Studies. (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Spring) Field study on San Salvador, Bahamas focusing on the biological and geological studies of the coral reef complex and associated habitats of the Caribbean. We will examine the ecology and taxonomy of associated biota as well as the physical, chemical and sedimentary processes in coral reef environments. prereq: BIOL 1011 and 1012 or GEOL 1110 or IBS Grad student

BIOL 4850. Food and Humans. (3 cr.; A-F or Audit; Fall Odd Year) In this course we will examine the evolutionary genetics underlying the process of plant and animal domestication, and the evolution of weeds and insect pests in the new environment provided by human-initiated agriculture. Classical readings on the origin of agriculture and agricultural pests (weeds and insects) and the latest findings in this constantly changing field will be examined. Students will learn key concepts regarding the response of plants and animals to natural and artificial selection, and the application of population genetics, phylogenetics, quantitative genetics, and genetic mapping to major questions in agricultural genetics. Past and current challenges in agricultural productivity and sustainability will be addressed throughout the course. prereq: 2201, 3401 or IBS graduate student

BIOL 4861. Lake Ecology. (3 cr.; A-F or Audit; Every Spring) This course offers a hands-on introduction to the ecology of lake ecosystems with a focus on lakes of the temperate and boreal regions, particularly Minnesota. We explore how factors including temperature, light, water chemistry, water motion, nutrients, and organisms interact in aquatic environments to determine the distribution, abundance, and behavior of aquatic biota Laboratory exercises reinforce and expand on lecture materials and include the identification of fish, zooplankton, benthos, and phytoplankton as well as field excursions to area lakes. pre-req: BIOL 2801, no grad credit

BIOL 4863. Ecosystems Ecology and Biogeochemistry. (3 cr.; A-F or Audit; Every Spring) Ecosystems ecology is the integrated study of the flows of materials and energy through ecosystems, which includes both the living (biotic) and non-living (abiotic) components. Biogeochemistry is a major subfield of ecosystems ecology, and deals with the cycling of nutrients through ecosystems. In this class, we will discuss the integration of ecosystems and biogeochemistry in terrestrial environments, specifically focusing
on how human activities influence ecological systems and vice versa. It is my hope that you will walk away from this course with a better understanding of how large environmental issues such as climate change and invasive species affect ecological systems. Pre-req: BIOL 2801 or instructor consent; no grad credit

BIOL 4891. Animal Behavior. (2 cr.; A-F or Audit; Periodic Fall) Known behavior of various vertebrate and invertebrate phyla, emphasizing adaptive significance and the genetics and ontogeny of behavioral patterns. Mating, aggressive, nutritive, and nurturing behavior and relation to ecology of animal populations. (2 hrs lect) pre-req: 2801 or IBS Grad student

BIOL 4992. Senior Seminar: Classic Readings in Natural History. (1 cr.; S-N or Audit; Every Spring) Readings and discussion of the classics of natural history writing from authors such as Charles Darwin, Charles Lyell, John Wesley Powell, Peter Freuchen, Rachel Carson, Paul Errington, and E.O. Wilson, among others. Pre-req: Seniors who have declared a natural history minor, no grad credit

BIOL 5001. Teaching and Learning in the Life Sciences. (1 cr.; S-N only; Every Spring) Exploration of learning theory and educational practices designed to help develop skills in the classroom. Topics will include: learning styles, classroom management, assessment, active and cooperative learning, and educational technology. Pre-req: grad student or prior teaching experience; instructor consent

BIOL 5201. Leverage bioinformatic tools to manage big data and answer primary biology questions. (3 cr.; A-F or Audit; Periodic Fall & Spring) Biology has moved into a new era of big data, especially in the field of genomics. This course will introduce basic principles of bioinformatics and how to apply bioinformatic tools to process large genomic datasets. This course will emphasize how to evaluate currently available software, implement software, build pipelines for analysis, interpret outputs, apply statistics and finally produce publication appropriate figures. Pre-req: BIOL 2201 or grad student

BIOL 5232. Molecular Biology Laboratory. (2 cr.; A-F only; Every Spring) Regulation of gene expression in prokaryote and eukaryote explored through use of recombinant DNA technologies. Pre-req: 4231 or 4231C (concurrent enrollment is allowed)CHEM 3322 or Biochemistry and Molecular Biology or IBS Grad student; credit will not be granted if already received for 4232

BIOL 5240. Ecological Genetics. (3 cr.; A-F or Audit; Periodic Fall & Spring) Examines basic concepts in population and quantitative genetics. Focus is on techniques that reveal the genetic structure and adaptive value of ecologically important traits. Pre-req: 1012, 2201, Stat 1411 or IBS grad student

BIOL 5511. Virology. (3 cr.; A-F or Audit; Periodic Fall & Spring) Viruses and hosts; effects of viral infections on cells; expression of viral genome in procaryotic and eucaryotic cells; epidemiology and pathogenesis of viruses, including emerging ones; viral evolution. (2 hrs lect, 3 hrs lab) Pre-req: 3502 or 4501, or IBS Grad student or instructor consent

BIOL 5515. Microbial Diversity and Phylogeny. (3 cr.; A-F only; Periodic Fall) Evolutionary survey and characteristics of microorganisms focusing on autotrophic and heterotrophic prokaryotes from various habitats. Isolation, examination, and identification of bacteria from field collections using microscopic, physiological, biochemical, molecular, phylogenetic, and computer database techniques. (2 hours lecture and 2 hours lab) Pre-req: 2101 or 3100 oe 3502 or 4501 or IBS Grad student

BIOL 5604. Plant Physiology. (4 cr.; A-F or Audit; Every Spring) Mechanisms underlying plant function, growth and development: metabolism, water relations, mineral nutrition, transport, internal and external regulators of growth and development, stress physiology, biotechnology. Lab exercises evaluate physiological processes that enable plants to grow under varied conditions found in nature, such as water relations, mineral nutrition, metabolism, growth and development. Pre-req: BIOL 2201 or IBS grad

BIOL 5772. Neural Systems and Behavior. (3 cr.; A-F or Audit; Periodic Spring) Review of the basic neurophysiological components of animal behavior. Emphasis will be on well-studied neuroethological models such as weakly electric fish, bats, owls and crayfish. Pre-req: 1012, 3703 or IBS Grad student or instructor consent

BIOL 5777. Plankton Biology. (2 cr.; A-F or Audit; Every Spring) Explores topics in the biology of plant and animal plankton with emphasis on lake communities. Topics include biogeography, life-history, anatomy, physiology, and ecology of plankton. Basic limnology covered as relevant. Meets twice weekly for lecture and literature discussion. Pre-req: 2801, 2802 or WRS or IBS Grad student

BIOL 5801. Microbial Ecology. (2 cr.; A-F or Audit; Periodic Spring) Microorganisms in natural environments: diversity, distribution, energetic, and growth of heterotrophic and autotrophic microbes in oxic and anoxic habitats. Roles of microbial populations and communities in biogeochemical cycling, ecosystem functioning, landscapes, and industrial, agricultural, and environmental applications. Pre-req: (2101 or 3100) and (2801 or 3502 or 4501), or WRS or IBS Grad student

BIOL 5805. Fisheries Ecology and Management. (3 cr.; A-F or Audit; Periodic Fall & Spring) Lectures, readings and computer exercises relating to current issues in fisheries ecology. Computer exercises will emphasize techniques used by scientists working in the field and prepare the student for the use of quantitative research tools for independent research. Includes 2 one-hour lectures and 1-three hour lab weekly. Pre-req: 2801, 2802, college-level course in statistics or WRS or IBS Grad student

BIOL 5807. Mathematical Ecology. (3 cr.; A-F or Audit; Fall Odd Year) Development and use of mathematical models to describe ecological processes and discrete population models; implications of landscape patterns and processes. Pre-req: (2801, Math 1290 or Math 1297) or WRS or IBS Grad student

BIOL 5808. Landscape Ecology: Theory and Application. (3 cr.; A-F or Audit; Periodic Fall) Key issues in landscape ecology including scale, measuring landscape patterns, mechanisms shaping landscapes, implications of landscape patterns on plant and animal populations, communities, and ecosystems, and implementing landscape principles for natural resource management. Pre-req: 2801, 2802 or WRS or IBS Grad student

BIOL 5809. Ecological Statistics. (; 3 cr.; A-F only; Every Spring) Directed toward the upper-level undergraduate student and MS-level graduate student, with previous introductory statistical experience. Provides an introduction to many of the data-manipulation, analysis, and display techniques currently available. Seeks to provide students with the background and practical experience necessary to make appropriate decisions regarding the treatment of data, the interpretation of statistical analyses, and the formal presentation of study results. Pre-req: STAT 1411 or 2411, Biology or IBS grad student

BIOL 5818. Biotic Response to Climate Change. (3 cr.; A-F or Audit; Every Spring) Many spaces are already responding to climate change, as evidenced by earlier budburst, flowering, and arrival of insects and bird pollinators. In only a few cases can we distinguish between phenotypic responses to longer growing seasons and warmer temperatures (plasticity) and evolutionary change in response to altered patterns of natural selection. Climate change will pose strong evolutionary challenges to native populations. In this course, we will explore the fundamental response of the biota to these changes: extinction, migration, and adaptation. Pre-req: grad student

BIOL 5833. Stream Ecology. (3 cr.; A-F or Audit; Fall Even Year) Studies of stream communities and ecosystems as influenced by biological interactions and physical factors. Emphasis on North Shore streams. (2 hrs lect, 6 hrs lab and field) Pre-req: 2801 or WRS or IBS Grad student

BIOL 5861. Lake Ecology. (3 cr.; A-F or Audit; Every Spring) This course offers a hands-on introduction to the ecology of lake ecosystems with a focus on lakes of the temperate and boreal regions, particularly Minnesota. We explore how factors including temperature, light, water chemistry, water motion, nutrients, and organisms interact in aquatic environments to determine the distribution, abundance, and behavior of aquatic biota. Laboratory exercises reinforce and expand on lecture materials and

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
include the identification of fish, zooplankton, benthos, and phytoplankton as well as field excursions to area lakes. prerequisite: WRS or IBS Grad student.

**BIOL 5863. Ecosystems Ecology.** (3 cr.; A-F or Audit; Fall Even Year)
Survey of terrestrial and aquatic ecosystems, emphasizing current literature on ecosystem processes. (3 hrs lect) prerequisite: 2801, or WRS or IBS Grad student.

**BIOL 5865. Conservation Biology.** (2 cr.; A-F or Audit; Periodic Spring)
Introduction to science of species, habitat, and ecosystem conservation and management. prerequisite: 2801 or IBS Grad student.

**BIOL 5870. Wetland Ecology.** (3 cr.; A-F or Audit; Fall Odd Year)
Hydrology, nutrient cycling, and productivity of wetland ecosystems and the adaptations and interactions of resident biota; assessment, management, conservation, restoration, and creation of wetlands. Two daylong weekend field trips required. prerequisite: 2801, 2802 or WRS or IBS Grad student.

**BIOL 8333. FTE: Master’s.** (1 cr.; No Grade Associated; Every Fall, Spring & Summer)
(NO description) prerequisite: Master's student, adviser and DGS consent.

**BIOL 8777. Thesis Credits: Master’s.** (1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall, Spring & Summer)
(NO description) prerequisite: Max 18 cr per semester or summer; 10 cr total required (Plan A only).

**BIOL 8899. Seminar in Ecology.** (1 cr. [max 10 cr.]; A-F or Audit; Every Fall & Spring)
In-depth analyses of topics in ecology. prerequisite: Grad student in biology or related field.

**BIOL 8994. Graduate Research.** (1-4 cr. [max 10 cr.]; S-N or Audit; Every Fall, Spring & Summer)
Directed research or study on an advanced topic. prerequisite: Grad student in biology or related field.

**Business (BUS)**

**BUS 2100. Fundamentals of Accounting.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Introduction to financial and managerial accounting. Basic financial statement preparation. Basic decision making by managers using financial information. prerequisite: CUE major or BTAG or Business Administration Certificate or Museum Studies Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2200. Fundamentals of Economics.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
The course will provide a general description of the U.S. economy and an introduction to the framework used by economists to analyze economic issues. prerequisite: CUE major or BTAG or Business Administration Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2300. Fundamentals of Operations Management.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Introductory survey of production and operations as a functional area of management, including operations strategy and sustainability; manufacturing and service process design; project management; global supply chain, capacity and inventory management. Current industry best practices, such as lean six-sigma will also be discussed. prerequisite: CUE major or BTAG or Business Administration Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2400. Fundamentals of Organizational Management.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course presents students with a broad introduction to management processes and the complex world of managing in today's business environment. Topics include what managers do and skills they must possess to achieve organizational objectives, the management functions of planning, organizing, leading, and controlling and organizational dynamics such as globalization, social responsibility, and change. prerequisite: CUE major or BTAG or Business Administration Certificate or Museum Studies Certificate or pre-Civil Engineering or Civil Engineering major or certificate student or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2500. Fundamentals of Applied Statistics.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course introduces students to the fundamental of modern business statistics. Emphasis is on application of the statistical concepts to decision making in an uncertain environment. Topics include summary statistics, probability distributions and statistical inference which includes estimation, hypothesis testing and regression analysis. The application of computers in statistical analysis is introduced. prerequisite: CUE major or Business Administration Certificate or BTAG or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2600. Fundamentals of Financial Management.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
The objective of this course is to help the student to develop an understanding of the concepts and techniques of financial management in the modern business enterprise. Evaluation of the financial risks, returns, and costs is the necessary framework in which all business policies must be examined. Students are expected to have a basic understanding of the concepts and methods of financial management by the completion of this course. Specific topics of coverage include financial statement analysis, time value of money, risk and return, the valuation of equity and bonds, capital budgeting and the cost of capital analysis. Moreover, the course also serves as a foundation for advanced work in finance. prerequisite: CUE major or BTAG or Business Administration Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2700. Fundamentals of Marketing.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course introduces students to the discipline of marketing as it practices by organizations. Emphasis is on understanding how to best serve the consumer needs utilizing the most appropriate value proposition. The four Ps of marketing (product, place, price, and promotion) are introduced in the context of a globally competitive environment. prerequisite: CUE major or BTAG or Business Administration Certificate or Museum Studies Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**BUS 2800. Fundamentals of Human Resource Management.** (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course introduces students to the field of Human Resource Management (HRM). Course materials and assignments are designed to help students understand why organizations have an HRM function; what are the primary functional areas of HRM; how a well-developed HRM system can benefit organizations, and the respective roles of line managers, employees, and HRM professional in carrying out good HRM policies and practices. prerequisite: CUE major or BTAG or Business Administration Certificate or college consent; this course cannot be used to fulfill a LSBE major/minor requirement.

**Business Communication (BCOM)**

**BCOM 3141. Business Communications.** (3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Principles of business communication and their application to oral, written, and nonverbal communication. prerequisite: LSBE candidate or Economics major or college consent; credit will not be granted if already received for FMIS 3141

**Business Law (BLAW)**

**BLAW 2001. The Legal Environment.** (HUMANITIES; 3 cr.; A-F only; Every Fall, Spring & Summer)
Introduction to U.S. legal system and its impact on modern business operations. Ethical, economic, social, and political perspectives of legal environment. Constitutional law, administrative regulation, torts and products liability, contracts, business organizations, employment/labor law. prerequisite: Minimum 30 credits

**BLAW 3001. Law and Ethics for Financial Professionals.** (3 cr.; A-F only; Every Fall & Spring)
Examination of the legal and ethical issues faced by financial professionals. Topics include agency, bankruptcy, insider trading and other securities laws, obligations of corporate
CHE 1001. Introduction to Chemical Engineering. (3 cr.; A-F or Audit; Every Fall & Spring)
Investigation of chemical engineering careers. Use of science and mathematics in chemical engineering. Introduction to fundamental topics: process flow diagrams, continuous and batch operations, material and energy balances, fluid flow, heat and mass transfer, reactor design, material science, process control, engineering economics. Group dynamics and ethics. Team project on industrial case study. prereq: Pre or coreq Chem 1153 and 1154 or Chem 1161 and Math 1296 or Math 1596.

CHE 1020. Sustainable Engineered Systems. (SUSTAIN; 3 cr.; A-F or Audit; Fall Even Year)
Explore the engineered world using basic conservation tools (mass, momentum and energy balances). Use concepts from pollution control, unsustainable and sustainable systems, economics, history, and political contexts to understand what a sustainable future may look like. Develop problem solving skills and creativity. prereq: High school algebra and chemistry

CHE 2001. Introduction to Environmental Engineering. (3 cr.; A-F or Audit; Every Fall & Spring)
Comprehensive survey of environmental engineering. Fundamental science and engineering principles as basis for analyzing environmental issues. Federal laws on air pollution, wastewater discharge, and hazardous waste. Wastewater treatment, air pollution control, waste minimization, resource recovery, and recycling. prereq: Chem 1113 or higher, Math 1250 or higher

CHE 2011. Design of Engineering Experiments. (3 cr.; A-F or Audit; Every Fall)
Basic theories of experimental design, data analysis, and statistical process control, emphasizing their application to chemical engineering practice. prereq: Math 1297 and (prereq or coreq 2111 or 2211)

CHE 2111. Material and Energy Balances. (3 cr.; Student Option; Every Fall & Spring)
Elementary principles of chemical processes, emphasizing material and energy balances. prereq: Chem 1151 or 1161 or 1153 and 1154, Math 1296 or 1596 minimum grade of C

CHE 2121. Chemical Engineering Thermodynamics. (3 cr.; A-F or Audit; Every Fall)
Application of thermodynamic principles to chemical engineering, emphasizing pressure-volume-temperature relationships, thermodynamic laws, thermochemistry, chemical equilibrium, and phase relationships. prereq: 2111 or 2211, (prereq or coreq Math 3280)

CHE 2211. Materials and Energy Balances. (4 cr.; A-F or Audit; Every Fall & Spring)
Elementary principles of chemical processes, emphasizing material and energy balances and problem solving. prereq: Minimum grade of C in the following courses CHEM 1151 or 1161 or (1153 & 1154) or (1173 & 1175) and MATH 1296 or 1596

CHE 3031. Computational Methods in Chemical Engineering. (3 cr.; A-F or Audit; Every Spring)
Modeling and simulation of chemical engineering processes; computational methods applied to chemical engineering; use of computation and process simulation tools. prereq or coreq: CHE 2121, CS 1121 or 1411, MATH 3280

CHE 3111. Fluid Mechanics. (3 cr.; A-F or Audit; Every Fall & Spring)
Mass and energy balances, Bernoulli's equation, momentum balance, laminar and turbulent flow, boundary layer theory, pumps, compressors, and turbines. prereq: BSChE cand, CHE 2111 or 2211 prereq or coreq. Phys 2011 or 2013 and 2014, MATH 3280, or instructor consent; credit will not be granted if already received for ME 3111 or CE 3221

CHE 3112. Heat and Mass Transfer. (3 cr.; A-F or Audit; Every Fall & Spring)
Theory and practice of heat and mass transfer. Fundamentals of diffusion, conduction, convection, and radiation with application to design of heat and mass transfer equipment and systems. prereq: BSChE candidate, 3111, (prereq or coreq 2121) or instructor consent

CHE 3196. Cooperative Education I. (1 cr. [max 3 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Practical work experience with an employer closely associated with student's academic area. Arranged by mutual agreement among student, department, and employer. Formal written report of work completed must be submitted to department at end of experience. prereq: BSCHE cand, department consent

CHE 3211. Chemical Engineering Laboratory I. (COMM & LAN; 3 cr.; A-F or Audit; Every Fall)
Introduction to statistical uncertainty analysis and design of experiments. Experiments illustrating physicochemical, fluid mechanics, and heat and mass transfer principles. Technical report writing and presentation. Standard laboratory practice and safety. prereq: BSCHE candidate, pre or co-req CHE 2011, 3031, 3112

CHE 3231. Properties of Engineering Materials. (3 cr.; A-F or Audit; Every Fall)
Thermodynamic, mechanical, and kinetic properties of materials: structure and bonding in metals, alloys, corrosion, crystals, semiconductors, polymers, colloids, ceramics, interfaces, and composites. prereq: BSCHE cand, 2121, Chem 1152 or 1162

CHE 3241. Principles of Particle Technology. (3 cr.; A-F or Audit; Every Fall)
The science and engineering dealing with the production, handling, modification and use of a wide variety of particulate materials, both wet and dry, in sizes ranging from the sub-micron to the centimeter scale. prereq: BSCHE candidate, (prereq or coreq 3111), Phys 2012 or 2015 and 2016, instructor consent

CHE 3296. Cooperative Education II. (2 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Continuation of practical work experience with an employer closely associated with student's academic area. Arranged by mutual agreement among student, department, and employer. Formal written report of work completed must be submitted to department at end of experience. prereq: BSCHE candidate, CHE 3196 and department consent

CHE 3311. Transport Processes/Unit Operations of Fluid Flow and Heat Transfer. (5 cr.; A-F or Audit; Every Summer)
Bernoulli's equation, momentum balance, laminar and turbulent flow, boundary layer theory, pumps, compressors, and turbines. Fundamentals of diffusion, conduction, and radiation with application to design of fluid and heat transfer unit operations. prereq: BSCHE candidate, CHE 2121 pre or co-req, PHYS 2011 or 2013 and 2014 or 2017 and 2014, MATH 3280, instructor consent. Credit will not be granted if already received for CHE 3111 or CHE 3112 and ME 3111 or ME 4112 or CE 3221

CHE 3791. Independent Study. (1-3 cr.; Student Option; Every Fall, Spring & Summer)
Directed individual study arranged with instructor and head of department before
CHE 3894. Chemical Engineering Research. (1-3 cr. [max 6 cr.]; Student Option; Every Fall, Spring & Summer) Experience in a selected research area. Student must present a satisfactory written report and oral presentation. Course may also be used for portion of a research proposal.
prereq: BSChE candidate, maximum 6 credits, instructor consent

CHE 4111. Separations. (3 cr.; A-F or Audit; Every Fall) Application of principles of mass transfer. Design of distillation, gas absorption, liquid extraction, drying, leaching, and membrane separation processes. prereq: BSChE Candidate, 3031, pre or co-req 3112; no grad credit

CHE 4141. Material and Minerals Processing. (3 cr.; A-F or Audit; Every Fall) Flow sheets and unit operations of processes for the separation of commercially valuable minerals from their ores; particle characterization, comminution, concentration, handling; economics, environment, introduction to pyro and hydrometallurgy. prereq: Chem 1153, 1154, Math 1297, Phys 2013

CHE 4142. Extractive Metallurgy: An Introduction to Metals' Extraction. (3 cr.; A-F or Audit; Every Fall) Designed for the senior undergraduate and graduate audience, this course covers the basics of pyro, hydro, and electro-metallurgy. Relevant theories on thermodynamics and chemical kinetics are reviewed as a basis for a first description of industrial metals production. Thermodynamics and kinetics are presented with a focus on applications to industrial processes. Iron, copper, and aluminum production are used as examples of pyro, hydro, and electro-metallurgy. Students taking this course will have a good command of the terms and methods employed in metals extraction. pre-req: CHE 2121 and 3112 or 3311 or instructor consent

CHE 4196. Cooperative Education - Process Improvement. (3 cr.; A-F or Audit; Periodic Summer) Practical Lean Six Sigma Process Improvement work experience with an employer closely associated with student's academic area. Arranged by mutual agreement among student, instructor, department, and employer. Student will complete process improvement projects at the employer's worksite guided by the instructor and supervisor with formal progress reports at various stages of the project. pre-req: BSChE and co-op student, instructor consent; no grad credit

CHE 4211. Chemical Engineering Laboratory II. (3 cr.; A-F or Audit; Every Spring) Statistical design of engineering experiments. Experiments illustrating principles of separations and reactor design. Technical report writing and presentation. Standard laboratory practice and safety. prereq: BSChE candidate, 3211, pre or co req 4111 and 4301; no grad credit

CHE 4301. Chemical Reaction Engineering. (3 cr.; A-F or Audit; Every Fall & Summer) Theory of rates of chemical reactions. Application of rate data to design of batch, tubular, continuous stirred-tank, and catalytic-chemical reactors. prereq: 3112; no grad credit

CHE 4401. Process Control. (3 cr.; A-F or Audit; Every Spring) Dynamic behavior of open- and closed-loop systems. Design and operation of automatic controllers for chemical process systems. prereq: BSChE candidate, CHE 3031, CHE 3112 pre or co-req; no grad credit

CHE 4402. Process Dynamics and Control. (3 cr.; A-F or Audit; Every Spring) Dynamic behavior of open- and closed-loop systems. Design and operation of automatic controllers for chemical process systems. The programming of a microcontroller. prereq: BSChE candidate, 3031 (prereq or coreq 2121, 3112), Phys 2012 or 2015 and 2016, instructor consent, no grad credit

CHE 4501. Chemical Engineering Design I. (SUSTAIN; 4 cr.; A-F or Audit; Every Fall) Preliminary design of chemical processing or hazardous waste treatment plant. Use of engineering economics and calculation of rate return and hazardous waste management as applied to chemical plants. Market survey, flow sheet preparation, material and energy balances. prereq: BSChE candidate, prerequisite or corequisite 3031, 3111, 3112; no grad credit

CHE 4502. Chemical Engineering Design II. (4 cr.; A-F or Audit; Every Spring) Continuation of CHE 4501. Equipment design, instrumentation, process control, hazardous waste management plan, plant safety, economic feasibility, and institute analysis for process chosen. prereq: BSChE candidate, prerequisite or coreq 4501; no grad credit

CHE 4601. Biochemical Engineering I. (3 cr.; A-F or Audit; Every Fall) Application of chemical engineering principles to design and operation of industrial biological processes, emphasizing enzyme and cell growth kinetics. prereq: 2111 or 2211, minimum 60 credits or instructor consent; credit will not be granted if already received for 5601

CHE 4603. Biorenewable Resources. (SUSTAIN; 3 cr.; A-F or Audit; Every Spring) Comprehensive investigation of the engineering systems involved in the sustainable production of fuels, chemicals, and materials from bioresources. prereq: 2111 or 2211 or instructor consent

CHE 4613. Air Pollution Control. (3 cr.; A-F or Audit; Every Spring) Analysis of what air pollution is, where it comes from and where it goes on the local, regional and global scales. Discussion of the regulatory apparatus concerning air quality. Design of air pollution control equipment. prereq: CHEM 1155, 1156, MATH 1297 or 1597, PHYS 2015, 2016

CHE 4701. Biochemical Engineering II. (3 cr.; A-F or Audit; Every Spring) Continuation of CHE 4601/5601. Advanced design and operation of bioreactors for varied cultivation methods, transport limitations, and reactor types. Operation and control considerations for aeration, agitation, heat transfer, and instrumentation. Unit operations for recovery and purification of products. Microbial, animal, plant, and mixed culture applications. prereq: 4601 or 5601; credit will not be granted if already received for 5701

CHE 4711. Biomedical Engineering. (3 cr.; A-F or Audit; Every Fall) Overview of the field of Biomedical Engineering. Topics covered include cell and tissue engineering, transport phenomena in biological systems, biomaterials, bioelectricity and neural engineering, development of biomedical devices, and government regulations in the biomedical industry. prereq: MATH 3280, PHYS 2013 or 2017, minimum 60 credits or instructor consent; credit will not be granted if already received for 5711; no grad credit.

CHE 5021. Transport Phenomena. (3 cr.; A-F or Audit; Every Fall) Study of the fundamentals and field equations for momentum, heat and mass transport with emphasis on the prediction of transport rates in chemical engineering applications. prereq: 3112 or Grad student or instructor consent

CHE 5022. Transport Processes in Wells and Pipelines. (3 cr.; A-F or Audit; Periodic Fall & Spring) Exposes students to various elements of fluid and heat flows that occur in oil/gas wells and pipelines. The fundamentals of multiphase flow are explained in terms of single-phase flow mechanics and configuration of the phases. Simplicity in modeling approach is retained. Field examples are used to reinforce understanding of the models. prereq: 3111, 3112 or Grad student or instructor consent

CHE 5031. Chemical Engineering Analysis. (3 cr.; A-F or Audit; Fall Odd, Spring Even Year) Development of mathematical and statistical models for chemical engineering systems; simulation of these systems using digital computers; and system optimization and analysis of results. prereq: 4111 or Grad student or instructor consent

CHE 5121. Advanced Thermodynamics. (3 cr.; A-F or Audit; Every Fall) Theory and application of phase equilibrium thermodynamics. Estimation and correlation of thermodynamic properties. Multicomponent systems. Solution theory. High pressure equilibria. Corresponding states. prereq: 2121 or instructor consent

CHE 5131. Polymer Engineering. (3 cr.; A-F or Audit; Every Spring) Polymeric materials have a tremendous variety of applications in synthetic fibers, packaging, automobiles, electronic instruments, energy, sports, etc. This course will focus on theoretical and engineering applications of polymer design, processing, and production.

CHE 5555. Project Credits: MEng - Chemical Engineering. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Master of Engineering project work as determined by faculty adviser and student with approval by the department director of graduate studies. prereq: MEng candidate, instructor consent

CHE 5601. Biochemical Engineering I. (3 cr.; A-F or Audit; Spring Even Year) Application of chemical engineering principles to design and operation of industrial biological processes, emphasizing enzyme and cell growth kinetics. prereq: 2111 or 2211, grad student and instructor consent; credit will not be granted if already received for 4601

CHE 5610. Recycling Process Engineering. (3 cr.; A-F or Audit; Fall Odd Year) Investigation into the best available current technology for recycling processes. Processes used to recycle materials such as metals, oils plastics, cardboard, and white-goods will be investigated. Identification of current regulations and state of the art processes. Comparison of recycled vs. raw chemical property characteristics. prereq: BSChE candidate or instructor consent


CHE 5621. Particle Technology. (3 cr.; A-F or Audit; Fall Odd Year) Applications of particle technology, especially in the chemical and minerals industry context. Particle concepts including: particle characterization, slurry characterization, size reduction, size enlargement, particle separation, and multi-phase processes. The major unit operations common to solids processing: mining, crushing, concentration by sedimentation, filtration, flotation, and pyrometallurgy. prereq: 3111 and Grad Student; credit will not be granted if already received for 4621

CHE 5642. Mining and Environmental Engineering. (3 cr.; A-F or Audit; Every Fall) Design of environmental engineering controls used in and discussion of environmental issues associated with mining and mineral processing activities. Includes mining industry regulatory/public policy issues. prereq: minimum 60 credits, CHE 2001 or CE 3025 or ESCI 2210; or instructor consent

CHE 5701. Biochemical Engineering II. (3 cr.; A-F or Audit; Every Spring) Continuation of CHE 4601/5601. Advanced design and operation of bioreactors for varied cultivation methods, transport limitations, and reactor types. Operation and control considerations for aeration, agitation, heat transfer, and instrumentation. Unit operations for recovery and purification of products. Microbial, animal, plant, and mixed culture applications. prereq: 4601 or 5601, grad student; credit will not be granted if already received for 4701

CHE 5711. Biomedical Engineering. (3 cr.; A-F or Audit; Every Fall) Introduction to the field of Biomedical Engineering. Topics covered include cell and tissue engineering, transport phenomena in biological systems, biomaterials, bioelectricity and neural engineering, development of biomedical devices, and government regulations in the biomedical industry. prereq: 3111, 3112 or grad student or instructor consent; credit will not be granted if already received for CHE 4711.

CHE 5991. Graduate Independent Study in Chemical Engineering. (1-3 cr.; max 6 cr.) A-F or Audit; Periodic Fall, Spring & Summer) Directed study of special interest topics not available in the standard curriculum. Must be arranged with instructor before registration. May include readings, research and/or special projects, prereq: graduate student and instructor consent

CHE 5995. Special Topics in Chemical Engineering (Various Titles to be Assigned). (1-4 cr.; max 12 cr.) A-F or Audit; Periodic Fall, Spring & Summer) Topics not available in the regular department curriculum. Topics may include specialties of the department or visiting faculty. prereq: Graduate student or instructor consent

CHE 8150. Seminar. (1 cr. max 2 cr.) S-N or Audit; Every Fall & Spring) Practice in preparation and oral presentation of reports on articles from the literature or on graduate research. prereq: graduate CHE major or instructor consent

CHE 8777. Thesis Credits: Master’s. (1-10 cr.; No Grade Associated; Every Fall, Spring & Summer) prereq: graduate student
CHEM 1153. General Chemistry I. (NAT SCI; 4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Fundamental principles of chemistry exemplified by study of elements, compounds, and their reactions. Covers fundamental concepts of the atom, molecule, stoichiometry, chemical reactions, thermochromy, gas laws, atomic structure, periodic table, chemical bonding, and other selected topics. The companion laboratory, CHEM 1154, should be taken concurrently. The combination of CHEM 1153 and CHEM 1154 meets the lab component of NAT SCI, LE CAT 4, prereq: One year high school chem, Math ACT 24 or higher or a grade of at least C- in Math 1005. Credit will not be granted if already received for 1151 or 1161 or 1173.

CHEM 1154. General Chemistry Lab I. (NAT SCI; 1 cr.; A-F or Audit; Every Fall, Spring & Summer)
Basic laboratory skills while investigating the fundamental principles of chemistry. Covers fundamental concepts of the atom and molecule, stoichiometry, acid-base reactions, oxidation-reduction reactions, thermochromy, characteristic properties of anions, gas laws and spectrophotometry. This laboratory accompanies lecture CHEM 1153. The combination of CHEM 1153 and CHEM 1154 meets liberal education category 4 requirements. prereq: Previous or concurrent enrollment in CHEM 1153 or 1173; credit will not be granted if already received for CHEM 1151, 1161 or 1174.

CHEM 1155. General Chemistry II. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Fundamental principles of chemistry exemplified by study of elements, compounds, and their reactions. Covers intermolecular forces, properties of liquids, solids and solution, chemical kinetics, chemical equilibrium, acids and bases, solubility, thermodynamics, electrochemistry, nuclear chemistry, and other selected topics. Solid knowledge of college algebra and General Chemistry I is required. The companion laboratory course CHEM 1156 should be taken concurrently, prereq: 1151 or 1153 or 1161 or 1173; credit will not be granted if already received for 1152, 1162 or 1175.

CHEM 1156. General Chemistry Lab II. (1 cr.; A-F or Audit; Every Fall, Spring & Summer)
Fundamental principles of chemistry exemplified by laboratory study of elements, compounds, and their reactions. Covers intermolecular forces, properties of liquids, solids and solution, chemical kinetics, chemical equilibrium, acids and bases, solubility, thermodynamics, electrochemistry, nuclear chemistry, and other selected topics. This laboratory accompanies lecture CHEM 1155, prereq: 1151 or 1153 or 1154 or 1174, concurrent or previous enrollment in CHEM 1155; credit will not be granted if already received for Chem 1152, 1162 or 1176.

CHEM 1173. General Chemistry I for Majors. (NAT SCI; 4 cr.; A-F or Audit; Every Fall)
Intended for students pursuing majors in the Department of Chemistry and Biochemistry. Coverage of chemistry principles exemplified by study of elements, compounds, and their reactions. Covers concepts of atomic and molecular structure, chemical bonding, stoichiometry, chemical reactions, thermochromy, intermolecular forces, gases, liquid and solutions, and other selected elements. Fundamental and applied concepts will be explored and enriched using a range of mathematical tools. Additional topics introducing majors to the field and profession will be covered. The companion laboratory course, CHEM 1174 should be taken concurrently, prereq: One year high school chemistry, Math ACT 24 or higher or a grade of at least C- in Math 1005, BS-Chemistry major or BS-Biochemistry major or BA-Chemistry major or BA-Biochemistry major or instructor consent. Credit will not be granted if already received for Chem 1151 or 1153 or 1161.

CHEM 1174. General Chemistry I Lab for Majors. (NAT SCI; 1 cr.; A-F or Audit; Every Fall)
Intended for students pursuing majors in the Department of Chemistry and Biochemistry. Basic laboratory skills covering fundamental principles of chemistry. Covers concepts of atomic and molecular structure, chemical bonding, stoichiometry, acid-base reactions, oxidation-reduction reactions, thermochromy, characteristic properties of anions, gas laws, and spectrophotometry. Fundamental and applied concepts will be explored and enriched using a range of mathematical tools. The laboratory accompanies lecture CHEM 1173 and should be taken concurrently, prereq: Previous or concurrent enrollment in CHEM 1173 or 1153.

CHEM 1175. General Chemistry II for Majors. (4 cr.; A-F or Audit; Every Spring)
Intended for students pursuing majors in the Department of Chemistry and Biochemistry. Coverage of chemistry principles exemplified by study of elements, compounds, and their reactions. Covers concepts of solids and solutions, chemical kinetics and reaction mechanisms, chemical equilibrium, acids and bases, solubility, thermodynamics, electrochemistry, descriptive chemistry of the elements, coordination chemistry, nuclear chemistry, and other specific topics. Fundamental and applied concepts will be explored and enriched using a range of mathematical tools. Additional topics introducing majors to the field and profession will be covered. The companion laboratory course, CHEM 1176 should be taken concurrently, prereq: CHEM 1173 or CHEM 1153 and BS-Chemistry major or BS-Biochemistry major or BA-Chemistry major or BA-Biochemistry major or instructor consent.

CHEM 1176. General Chemistry II Lab for Majors. (1 cr.; A-F or Audit; Every Spring)
Intended for students pursuing majors in the Department of Chemistry and Biochemistry. Basic laboratory skills covering fundamental principles of chemistry: elements, compounds and their reactions. Covers titration, intermolecular forces, colligative properties, kinetics, chemical equilibria, and qualitative analysis. Fundamental and applied concept will be explored and enriched using a range of mathematical tools. The laboratory accompanies lecture CHEM 1175 and should be taken concurrently, prereq: previous of concurrent enrollment in CHEM 1175.

CHEM 1191. Independent Study. (1-2 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer)
For students wishing to do special work in areas useful to individual programs and objectives when such are not available in regular course offerings. prereq: department consent

CHEM 2212. Environmental Chemistry. (NAT SCI,SUSTAIN; 4 cr.; A-F or Audit; Periodic Fall)
Study of chemical processes in natural air, water, soil and sediment environments. Sources, reaction, transport, effects, and fates of natural and anthropogenic chemical species will be covered. Methods of analysis of environmental samples, with emphasis on quantitative treatment of data. prereq: 1152 or 1162 or 1155 and 1156 and 1176, Environmental Science major

CHEM 2222. Quantitative Analysis. (3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Considered the first course of analytical chemistry, this course aims to explore the concepts of quantification and measurement related to chemical systems. Topics in this course include statistical analysis of error/uncertainty, systematic development of aqueous chemical equilibria, and fundamental principles of electrochemical, spectrophotometric, and chromatographic analyses. prereq: 1152 or 1162 or 1155 and 1156 or 1175 and 1176, concurrent registration in 2223 is strongly recommended.

CHEM 2223. Quantitative Analysis Laboratory. (1 cr.; A-F or Audit; Every Fall, Spring & Summer)
Lab companion to 2222 involving the quantitative analysis of organic and inorganic samples using classical and instrumental techniques. Students are instructed in the use of classical and modern computer-controlled instrumentation and techniques, as applied to the acquisition and analysis of experimental data. prereq: 1152 or 1162 or 1155 and 1156 or 1175 and 1176; concurrent registration in 2223 is required.

CHEM 2242. Analytical Chemistry and the Environment in Poland. (4 cr.; A-F or Audit; Periodic Summer)
Theory and practice in quantitative chemical analysis, covering statistics, acid-base equilibria, chelometry, spectrometry, and chromatography, including volumetric, spectrophotometric, and separation methods, to be offered in Poland, with field trips to sites of environmental concern. prereq: 1152 or 1162 or 1155 and 1156 or 1175 and 1176, instructor consent; credit will not be granted if already received for 2222, 2232.

CHEM 2541. Organic Chemistry I. (3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Structure and bonding, stereochemistry, functional group reactions. prereq: 1152 or 1162 or 1155 and 1156 or 1175 and 1176;
CHEM 2542. Organic Chemistry II. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Functional group reactions, bioorganic chemistry. prereq: 2521 or 2541; credit will not be granted if already received for 2522, 2532.

CHEM 2543. Organic Chemistry I Laboratory. (1 cr.; A-F or Audit; Every Fall, Spring & Summer) Laboratory companion to CHEM 2542, for non-chemistry majors. Functional group reactions, bioorganic chemistry. prereq: 2521 or (2541 and 2543), must be taken after or concurrently with CHEM 2542; credit will not be granted if already received for 2522, 2532.

CHEM 2544. Organic Chemistry II Laboratory. (1 cr.; A-F or Audit; Every Fall, Spring & Summer) Laboratory companion to CHEM 2542, for non-chemistry majors. Functional group reactions, bioorganic chemistry. prereq: 2521 or (2541 and 2543), must be taken after or concurrently with CHEM 2542; credit will not be granted if already received for 2532.

CHEM 2545. Organic Chemistry II Laboratory for B.S. Chemistry Majors. (2 cr.; A-F or Audit; Every Spring) Laboratory companion to CHEM 2542, for B.S. Chemistry majors. Functional group reactions, bioorganic chemistry. prereq: 2521 or (2541 and 2543), must be taken after or concurrently with CHEM 2542; credit will not be granted if already received for 2532.

CHEM 2901. Principles of Green Chemistry. (SUSTAIN; 3 cr.; A-F or Audit; Periodic Spring) Survey of the principles of green chemistry emphasizing basic toxicology, the evaluation of waste production and environmental performance, catalysts and organic solvents, renewable resources and intentional design of green reactions and processes. prereq: 2542 or concurrent.

CHEM 3095. Chemistry Special Topics. (1-5 cr.; Student Option; Periodic Fall & Spring) Special topics in chemistry as assigned.

CHEM 3097. Internship in Chemistry. (1-2 cr.; S-N only; Every Summer) Experience in government, or industrial setting. Prior department approval and coordination with faculty sponsor are required. prereq: 2521 or 2541 or 2223, chemistry or biochemistry/molecular biology majors and department consent.

CHEM 3194. Chemistry Undergraduate Research. (1-3 cr. [max 30 cr.]; S-N or Audit; Every Fall, Spring & Summer) Experience in a selected area of research. prereq: department consent.

CHEM 3322. Biochemistry. (3 cr.; A-F or Audit; Every Spring & Summer) Survey of biochemistry, emphasizing enzyme catalysis, cellular energetics, and major metabolic processes. prereq: 2522 or 2532 or 2542.

CHEM 3324. Biochemistry Laboratory. (1 cr.; A-F or Audit; Every Spring & Summer) Laboratory program in physical chemistry, focusing on the application of statistical bio-thermodynamics to primary literature-based approaches in the field. Developing expertise in the application of theory to real-world problem solving in the field is emphasized. prereq: 4362 or 4634 or 4641, and 4351 or 3322; no grad credit.

CHEM 4242. Instrumental Analysis. (3 cr.; A-F or Audit; Every Spring) Theory of instrumental methods of chemical analysis, including electrometry, spectroscopy, and separations. prereq: 2222, 4632 or 4634 or 4642.

CHEM 4243. Instrumental Chemistry Laboratory. (2 cr.; A-F or Audit; Every Spring) Lab companion to 4242 involving the use of computerized chemical instrumentation in the analysis of organic and inorganic samples. Students learn the use of modern programming tools as applied to the control of chemical instrumentation and acquisition and analysis of data there from. prereq: 2223, must be taken after or concurrently with CHEM 4242.

CHEM 4351. Biochemistry I. (3 cr.; A-F or Audit; Every Fall) Introduction to structural classes of biologically relevant molecules. Descriptions of monomeric small molecules and their incorporation into macromolecules. Covers amino acids, proteins, fatty acids, lipids, sterols, carbohydrates, nucleic acids, RNA, and DNA structures. prereq: 2222, 2541, 2542, Math 1296, concurrent registration in physical chem recommended - 4363.

CHEM 4352. Biochemistry II. (3 cr.; A-F or Audit; Every Spring) Introduction to metabolism of carbohydrates, fatty acids, steroids, nucleic acids, amino acids, and xenobiotics. Common metabolic pathways of glycolysis, gluconeogenesis, citric acid cycle, etc. The interrelated nature of these pathways and their cellular regulation will be covered. prereq: 4351.

CHEM 4363. Biochemistry Laboratory. (2 cr.; A-F or Audit; Every Fall) Applications of biochemistry and molecular biology techniques. prereq: 2222, 2542 or 2543, 2544 or 2545, BS-BMB major, concurrent registration in 4351 is required.

CHEM 4373. Physical Biochemistry: Statistical Bio-Thermodynamics. (3 cr.; A-F or Audit; Every Fall) This course is a quantitative treatment of physical principles and theories in physical biochemistry with a focus on applications of statistical bio-thermodynamics to primary literature-based approaches in the field. Developing expertise in the application of theory to real-world problem solving in the field is emphasized. prereq: 4632 or 4634 or 4641, and 4351 or 3322; no grad credit.

CHEM 4435. Inorganic Chemistry Laboratory. (1 cr.; A-F or Audit; Every Fall) Preparation and study of the properties of selected inorganic compounds. prereq: 3432, must be taken after or concurrently with CHEM 4436.

CHEM 4436. Inorganic Chemistry. (3 cr.; A-F or Audit; Every Fall) Atomic structure and properties of elements based thereon. Chemical bonding. Chemistry of coordination compounds. Mechanisms of selected inorganic reactions. Group theory and spectroscopy applied to inorganic systems. prereq: Chem 2222 or 2242 and 2542.

CHEM 4510. Polymer Chemistry. (3 cr.; A-F or Audit; Every Spring) In this course students will study the synthesis, characterization, and chemical structure-related properties of polymers. Good knowledge of Organic Chemistry is required. Chemical Kinetics and Thermodynamics will be applied. prereq: 2542 or instructor consent; no grad credit.

CHEM 4633. Physical Chemistry Laboratory. (1 cr.; A-F or Audit; Every Fall) Laboratory program in physical chemistry, including thermodynamics, spectroscopy, kinetics and quantum mechanics. prereq: 2yrs.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
CHEM 4634. Physical Chemistry I. (3 cr.; A-F or Audit; Every Fall)
Properties of gases, liquids, and solutions; thermodynamics and equilibria; chemical kinetics; principles of quantum chemistry. prereq: (Phys 2012 or (Phys 2015 and 2016) or Phys 1002); 2 yrs of college-level chemistry, Math 1297, (Chem 2222 or 2212 or 2242), BS-Chem major or BA-Chem major

CHEM 4641. Physical Chemistry I. (3 cr.; A-F or Audit; Every Fall)
Quantitative treatment of physical principles and theories in chemistry, including topics in thermodynamics and kinetics. prereq: 2 yrs chem, (2222 or 2212 or 2242), Math 3280, Phys 2012 or 2015 and 2016

CHEM 4642. Physical Chemistry II. (3 cr.; A-F or Audit; Every Spring)
Quantitative treatment of physical principles and theories in chemistry, including topics in quantum mechanics and spectroscopy. prereq: 4641

CHEM 4643. Physical Chemistry Laboratory I. (1 cr.; A-F or Audit; Every Fall)
Laboratory program in physical chemistry, accompanying lecture Chem 4641. prereq: 2 yrs chem, (2222 or 2212 or 2242), Math 3280, Phys 2012 or 2015 and 2016, 4641 may be taken concurrent

CHEM 4644. Physical Chemistry Laboratory II. (1 cr.; A-F or Audit; Every Spring)
Laboratory program in physical chemistry, accompanying lecture Chem 4642. prereq: 4643, 4642 may be taken concurrent

CHEM 4659. Fluorescence Methods in Life Science. (3 cr.; A-F or Audit; Spring Even Year)
Theoretical fundamentals, experimental design considerations, and applications of a wide range of fluorescence methods in chemistry, biochemistry, biology, medicine, and related fields. Each fluorescence method is designed to optimally answer specific questions quantitatively at the molecular level. Requires basic knowledge in related fields such as chemistry, biochemistry, physics, mathematics, and/or biology. prereq: 3322 or 4351 or 4632 and instructor consent

CHEM 5424. Advanced Inorganic Chemistry I. (3 cr.; A-F or Audit; Every Fall)
Advanced topics in inorganic chemistry including the following: Applications of Group Theory to inorganic chemistry such as molecular orbital theory and valence bond theory as well as vibrational analysis, organometallic chemistry including structure and bonding in organometallic compounds, reactions and reaction mechanisms of organometallic compounds, and the application of organometallic compounds as reagents and catalysts in organic synthesis, other advanced aspects of inorganic chemistry, e.g. Bioinorganic Chemistry and Aspects of Material Science. prereq: 4436 or equivalent or Grad student

CHEM 5510. Polymer Chemistry. (3 cr.; A-F or Audit; Every Spring)
In this course students will study the synthesis, characterization, and chemical structure-related properties of polymer. Good knowledge of Organic Chemistry is required. Chemical Kinetics and Thermodynamics will be applied. In addition to the lecture and exams, students in this graduate course will prepare an individual research report on a topic selected from recent developments in polymer chemistry. prereq: graduate student or instructor consent

CHEM 5524. Advanced Organic Chemistry I. (3 cr.; A-F or Audit; Every Fall)
Advanced topics of Organic Reaction Mechanisms and Aspects of Organic Synthesis prereq: 2542 or equivalent or Grad student

CHEM 5624. Advanced Physical Chemistry I. (3 cr.; A-F or Audit; Every Spring)
Classical and statistical thermodynamics, chemical kinetics, other selected topics in physical chemistry. prereq: 4642 or equivalent or Grad student

CHEM 5650. Computational Chemistry. (3 cr.; A-F or Audit; Periodic Spring)
Molecular Mechanics, Quantum Mechanics, semiempirical and ab initio molecular orbital calculations, density functional theory, and selected additional topics in computation chemistry such as biochemical applications, QSAR, and ligand modeling and docking. prereq: 4642 or equivalent or Grad student

CHEM 5659. Fluorescence Methods in Life Science. (3 cr.; A-F or Audit; Spring Even Year)
Theoretical fundamentals, experimental design considerations, and applications of a wide range of fluorescence methods in chemistry, biochemistry, biology, medicine, and related fields. Each fluorescence method is designed to optimally answer specific questions quantitatively at the molecular level. Requires basic knowledge in related fields such as chemistry, biochemistry, physics, mathematics, and/or biology. prereq: grad student or instructor consent

CHEM 5714. Applications of Spectroscopy. (4 cr.; A-F or Audit; Every Fall)
Application of spectroscopic techniques to structure elucidation, including NMR, FTIR, MS, UV-Vis, X-ray, EPR spectroscopy. Includes practical component. prereq: 4436 or equivalent or Grad student

CHEM 5725. Advanced Analytical Chemistry I. (3 cr.; A-F only; Every Fall)
Intended for advanced undergraduate and beginning graduate students in chemistry and related fields. Augment basic coursework in wet and instrumental analytical chemistry. Topics include statistical and chemometric methods for experimental design and data analysis, electronics and computers in chemical instrumentation, and selected techniques of instrumental analysis such as mass spectrometry, inductively coupled optical emission spectroscopy and analytical gas chromatography. prereq: Grad student or 4242 or equivalent

CHEM 5795. Special Topics in Chemistry: (Various Titles to be Assigned). (1-4 cr.; A-F or Audit; Periodic Fall & Spring)
Topics not available in standard curriculum. prereq: graduate student or instructor approval

CHEM 5994. Directed Research in Chemistry. (1-3 cr. [max 8 cr.]; Student Option; Every Fall, Spring & Summer)
Directed laboratory or theoretical research in the chemical sciences. prereq: Min 90 cr or grad in the sciences or engineering or instructor consent

CHEM 8184. Seminar. (1 cr.; S-N or Audit; Every Fall & Spring)
Practice in preparation and oral presentation of reports on articles from the literature or on graduate research. prereq: Grad chem major or instructor consent

CHEM 8224. Advanced Analytical Chemistry II. (4 cr.; A-F or Audit; Periodic Spring)
Advanced treatment of selected methods in analytical chemistry, prereq: Grad student or instructor permission

CHEM 8333. FTE: Master’s. (1 cr.; No Grade Associated; Every Fall & Spring)
(No description) prereq: Master’s student, adviser and DGS consent
CHEM 4824. Advanced Inorganic Chemistry II. (4 cr.; A-F or Audit; Periodic Fall & Spring) Discussion of structure, reactions, and bonding in inorganic and organo-metallic compounds in terms of valence bond, molecular orbital, and ligand field theories. prereq: grad student or instructor permission

CHEM 4844. FTE: Doctoral. (; 1 cr.; No Grade Associated; Every Fall & Spring) (No description) prereq: Doctoral student, adviser and DGS consent

CHEM 8524. Advanced Organic Chemistry II. (4 cr.; A-F or Audit; Every Fall & Spring) Advanced treatment of synthetic methods and reaction mechanisms in organic chemistry. prereq: grad student or instructor permission

CHEM 8666. Doctoral Pre-Thesis Credits. (; 1-6 cr. [max 12 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 6 cr per semester or summer; doctoral student who has not passed prelim oral; no required consent for the first two registrations up to 12 cr; departmental consent for the third and fourth registrations up to an additional 12 cr, or 24 cr total (for doctoral students admitted summer 2007 and beyond; doctoral students admitted prior to summer 2007 may register up to 4 times totaling 60 cr)

CHEM 8720. Modern Mass Spectrometry. (3 cr.; A-F or Audit; Fall Odd Year) Current instrumentation and techniques in mass spectrometry of molecular and atomic species. Discussion to include ionization techniques, mass analysis methods and detection of gas phase ions in the context of structural and elemental analysis. Interfacing of mass spectrometers to chromatographic systems is considered. Gas phase unimolecular and ion-molecule reaction kinetics and energetics are stressed as they relate to the information content observed in the mass spectrum. prereq: Grad student

CHEM 8750. Special Topics: (Various Titles to be Assigned). (; 1-4 cr. [max 8 cr.]; Student Option; Every Fall & Spring) Topics not available in standard curriculum. prereq: Grad student or instructor consent

CHEM 8777. Thesis Credits: Master's. (; 1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

CHEM 8888. Thesis Credits: Doctoral. (; 1-24 cr. [max 100 cr.]; No Grade Associated; Every Fall & Spring) (No description) prereq: Max 18 cr per semester or summer; 24 cr required

Chinese (CHIN)

CHIN 101. Beginning Chinese I: Mandarin Chinese. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall) Introduction to Mandarin Chinese for students with little or no prior study. Emphasis will be on expressions for daily living with appropriate grammar and vocabulary. Writing in the phonetic pin yin system will be introduced as will high frequency characters. prereq: Little or no prior formal study of this language or instructor consent

CHIN 102. Beginning Chinese II: Mandarin Chinese. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring) Introduction to Mandarin Chinese for students with little prior study. Emphasis will be on expressions for daily living with appropriate grammar and vocabulary. Writing in the phonetic pin yin system will be introduced as will high frequency characters. prereq: 1101

CHIN 1201. Intermediate Chinese I: Mandarin Chinese. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall) Consolidation and enrichment of previously acquired abilities speaking and understanding Mandarin Chinese. Emphasis on oral and aural skills, vocabulary building, some reading and writing in the phonetic pin yin system with high frequency characters. prereq: CHIN 1102 or instructor consent

CHIN 1202. Intermediate Chinese II: Mandarin Chinese. (COMM & LAN; 4 cr.; A-F only; Every Spring) Consolidation and enrichment of previously acquired abilities speaking and understanding Mandarin Chinese. Emphasis on oral and aural skills, vocabulary building, some reading and writing in the phonetic pin yin system with high frequency characters. prereq: 1201 or instructor consent

CHIN 1399. Chinese Language in China - Study Abroad. (GLOBAL PER; 6 cr.; A-F only; Periodic Summer) Study Chinese language and culture in a classroom setting and on field trips. Emphasis will be on language, culture and history. The program will be held in Beijing, Shanghai, and at the Ocean University of China in Qingdao, China. pre-req: instructor consent; also visit the UMD Study Abroad office

CHIN 3042. Aspects of Chinese Cultures: Interface between Traditions and Contemporary Values. (GLOBAL PER, HUMANITIES; 4 cr.; A-F or Audit; Every Spring) Survey of aspects of Chinese civilization and cultures. Students will examine diverse cultural values in the international community and work toward a sense of culturally responsive citizenship in the current global society. Taught in English.

CHIN 3097. Internship. (1-6 cr.; S-N only; Every Fall, Spring & Summer) Supervised international or domestic internship related to major. This is not available to minors. The use of Chinese must be necessary to carry out the internship. pre-req: Chinese Area Studies major, not available for minors; CHIN 1202 or equivalent with a C or better; Internship coordinator consent

CHIN 3591. Independent Study. (; 1-4 cr. [max 8 cr.]; A-F only; Every Fall & Spring) Students develop and carry out reading and research projects in consultation with the instructor. prereq: instructor consent

CHIN 4591. Independent Study. (; 1-4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Students develop and carry out reading and research projects in consultation with the instructor. prereq: instructor consent

Civil Engineering (CE)

CE 1000. History of Structures. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Fall) This course will study structures of historical significance. The social and economic importance of each structure as well as the merits of the engineering design of each structure will be considered. Students will learn to evaluate qualitatively how load is transferred in typical structures, for example, cable-stayed and suspension bridges. The styles of major contemporary structural designers will be examined; for example, the work of Eiffel, Roebling, Eads, Ammann and Maillart. Local structures, such as the Duluth lift bridge, will also be studied.

CE 1025. Introduction to Civil Engineering. (; 1 cr.; A-F or Audit; Every Fall & Spring) Introduction to transportation, water resources, structures, and geotechnical design. Introduction to ethics, professionalism, globalization, and contemporary issues in civil engineering. Introduction to the design process. prereq: Civil Engineering students only

CE 1074. Introduction to Civil Engineering. (5 cr.; A-F or Audit; Every Fall & Spring) Vector algebra. Applications of equations of equilibrium to analysis of simple engineering structures and machines. Nature and influence of friction. Elementary theory of statically determinate framed structures. Introductory treatment of stress and strain at a point. Stress-strain relation in two dimensions. Axial loading, torsion, shear and bending moment diagrams, bending stresses, deflection of determinate and indeterminate beams, instability. prereq: MATH 1297, PHYS 2011 or 2013 or 2017 and 2014; credit will not be granted if already received for ENGR 2015 and ENGR 2016 combined.

CE 2020. Computational Tools for Civil Engineers. (4 cr.; A-F or Audit; Every Fall & Spring) The course teaches the application of engineering computational software to address problems of interest in civil eng. Software to be used in the course: Mathcad, Excel, Matlab, VBA for Excel, Surfer, Grapher & Didger. Problems to be addressed are civil eng applications that involve vector operations, matrix operations, solution of linear and non-linear equations, differentiation, integration, systems of simultaneous linear and non-linear equations, curve fitting, linear and non-linear regression analysis, optimization analysis, basic statistics and probability, random numbers and Monte Carlo analysis and others. These applied mathematical problems will be solved mostly using built-in numerical functions in the software above. For some problems, programming concepts will be covered using
Mathcad, Matlab and VBA in Excel. Others topics to be covered include graphing with Grapher and digitizing with Didger and spatial interpolation analysis using Surfer; pre-req: CE 1025 and PHYS 2013 or 2017 and MATH 1297 or 1597 (previous or concurrent MATH only) or instructor consent

CE 2425. Geologic Principles for Civil Engineers. (SUSTAIN; 4 cr. ; A-F or Audit; Every Fall & Spring) The course presents an introduction of geology for civil engineers. The theory component of the course presents a comprehensive survey of Earth's composition, structure, and dynamics to develop an understanding of internal processes, plate tectonics, and surface processes as a framework for geological history and development of life (this component follows the same structure of the course GEOL 1110 - Geology and Earth Systems). The lab component of the course focuses on the application of geological science principles to topics that are relevant to the civil engineering profession. These topics include identification of mineral and rock samples in a context of construction materials or materials existing as part of foundations or excavations of civil engineering structures; topographic and geologic maps; description of rock mass and rock structures and conditions and engineering geology problems. prereq; credit will not be granted if already received for CE 2435 or CE 3425 or GEOL 1110

CE 3015. CAD & Engineering Drawing. (3 cr. ; A-F or Audit; Every Fall & Spring) Introduction to both hand and computer aided drafting. Hand drafting will include orthographic projections, multiple views, sectional views and isometric projections. Computer aided drafting will focus on the use of AutoCAD. This will include drawing procedures and tools, dimensioning, scaling, and plotting, prereq; 2017

CE 3016. Surveying. (2 cr. ; A-F or Audit; Every Fall & Summer) Fundamentals of observing distances, elevations, and angles. Traversing, Irregular areas. Circular and parabolic curves. Earthwork including mass diagrams. Construction staking, prereq; Math 1297

CE 3025. Environmental Engineering. (SUSTAIN; 4 cr. ; A-F only; Every Fall & Spring) Introduction to environmental engineering systems and infrastructure. Fundamentals including application of mass/energy balances and equilibrium to environmental systems. These concepts applied to environmental topics: risk assessment, water quality modeling, water/wastewater treatment, air quality modeling, municipal/hazard solid waste management, prereq; Chem 1151 or 1153 and 1154, CE 3221, BSCE candidate

CE 3026. Project Management. (3 cr. ; A-F or Audit; Every Fall & Spring) Study of basic concepts and models for successful management of projects in engineering. Topics discussed include: engineering economics, project delivery process, bid development, cost estimation, life cycle cost evaluation, contract structure, scheduling, resource allocation and LEED requirements.

CE 3027. Infrastructure Materials. (4 cr. ; A-F or Audit; Every Fall & Spring) An introduction to the behavior and structure of civil engineering materials, including laboratory investigation of physical and mechanical. Materials examined include concrete, steel, wood, asphalt and polymers, prereq: 2017, BSCE candidate

CE 3115. Structural Analysis. (3 cr. ; A-F or Audit; Every Fall & Spring) Introduction to the behavior of structures. Students will learn about the loads on structures, and how to determine the path of these loads through the structure. Topics include: truss analysis, shear and moment diagrams, deflections, analysis of indeterminate structures, influence lines, and shear and moment envelopes, prereq: 2017, Math 3280 (concurrent), BSCE candidate

CE 3221. Fluid Mechanics. (3 cr. ; A-F or Audit; Every Fall & Spring) Introduction to hydrologic analysis including precipitation, infiltration, hydrology analysis, stream routing, groundwater, and well hydrology. Fundamentals of hydraulic analysis, types of flow hydraulic devices, pipe, and open channel flow, uniform and varied flow, prereq: 3221, Math 3280 (concurrent), BSCE candidate

CE 3225. Hydraulics and Hydrology. (3 cr. ; A-F or Audit; Every Fall & Spring) Properties of fluids, fundamental of fluid flow including energy and momentum principles, applications to pipes and open channels, steady and unsteady flow, dimensional analysis, fluid measurement techniques, and pump performance, prereq: 2017, Math 3280 (concurrent)

CE 3316. Transportation Engineering. (4 cr. ; A-F or Audit; Every Fall & Spring) Introduction to transportation systems, driver behavior, vehicle characteristics, and principles of highway network planning. Introduction to roadway and intersection design methods, traffic signal operation and timing optimization methods. Fundamental of traffic flow theory, prereq; BSCE candidate

CE 3426. Soil Mechanics. (4 cr. ; A-F or Audit; Every Fall & Spring) Study of soil as an engineering material including description and classification of soils, total and effective stresses and pore water pressure in soils, and soil behavior as applied to conditions of engineering significance. This involves the characteristics of water flow through soils, soil bearing capacity, soil consolidation and settlement, soil shear strength, lateral earth pressure and slope stability analysis in soils, prereq; CE 2017 and BSCE candidate

CE 4096. Cooperative Education I. (1 cr. [max 3 cr. ] ; A-F or Audit; Every Fall, Spring & Summer) Practical work experience with an employer closely associated with student's academic area. Arranged by mutual agreement among student, department and employer. Formal written report of work completed must be submitted to the department at the end of the experience, prereq; CE candidate, instructor consent; no grad credit

CE 4100. Applications of Management in Resilient Precast Concrete. (1 cr. ; A-F or Audit; Every Fall & Spring) Taken concurrently with the online version of BUS 2400 (Fundamentals of Organizational Management), this course will provide insight into the project organization and management side of the precast concrete industry. The themes of resiliency and organizational management in precast concrete will be examined through a series of case studies with local precast concrete industry partners. This course cannot be taken as a standalone one-credit course; it must be taken concurrently with BUS 2400 or after successful completion of BUS 2400. pre-req; CE 4126, BUS 2400 concurrently or previously completed; no grad credit

CE 4115. Design of Steel Structures. (3 cr. ; A-F or Audit; Every Fall) The design of steel components and structures based on applicable design codes. This includes: tension members, compression members, beams, beam-columns, composite members, and connections. prereq: 3115, BSCE candidate, no grad credit

CE 4126. Design of Concrete Structures. (3 cr. ; A-F or Audit; Every Fall & Spring) The design of concrete structures based on applicable codes. Topics covered include: design of beams and slabs to resist moment and shear, design of columns, reinforcement detailing, and deflection control. prereq: 3115, BSCE Candidate, no Grad cr

CE 4128. Prestressed Concrete Structures. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Design and behavior of prestressed concrete structures: materials and systems (including specifics for precast and post-tensioned members), losses, flexure, shear, bond, deflections, partial prestressing, continuous beams. prereq: 4126

CE 4135. Advanced Reinforced Concrete and Steel Design. (3 cr. ; A-F or Audit; Every Spring) This course will be half semester each of advanced reinforced concrete and steel design topics such as: slender concrete columns, two-way concrete slab systems, design of concrete bearing and shear walls, stability of steel frames, steel members subjected to tension, bolted and welded steel connections, steel plate girders, and composite design and construction, pre-req: 3115, 4115, 4126; no grad credit

CE 4136. Structural Systems. (3 cr. ; A-F or Audit; Every Fall & Spring) Building codes, design loads, computerized structural analysis and design, gravity and lateral system analysis and design, structural system descriptions and selection considerations, and structural contract documents. pre-req: CE 4115, 4126; no grad credit

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
CE 4137. Advanced Structural Analysis and Design. (3 cr.; A-F or Audit; Periodic Fall & Spring) Advanced topics in both structural analysis and design. Topics include: matrix analysis, introduction to finite elements, design of prestressed concrete, design of two way concrete slabs, and design of steel plate girders. prereq: 4126, 4115, BSCE candidate; no grad credit

CE 4213. Open Channel Hydraulics. (3 cr.; A-F or Audit; Periodic Spring) The course will review energy and momentum principles and apply these to hydraulic engineering works such as man-made channels, dams, harbors, and bridges. Principles of sediment transport in alluvial channels will be considered in the context of designing engineered structures. pre-req: CE 3225 or instructor consent

CE 4215. Hydraulic Design. (3 cr.; A-F only; Every Fall) Application of hydraulic and hydrologic engineering data and methods for design of hydraulic structures including storm sewers, conveyance channels, flow control structures, detention and wet ponds, culverts, bridges, and dams. This course will make use of computer simulation models used in engineering design and include applications to stormwater managements. prereq: 3225, no Grad credit

CE 4228. Watershed Engineering. (3 cr.; A-F or Audit; Every Fall) Basic principles in hydrologic modeling and concepts of watershed delineation, land use change impact, case studies, and modeling tools are discussed and applied to natural and urban watersheds. The course will utilize hydraulic and hydrologic models and GIS tools for engineering design. pre-req: CE 3225 or instructor consent

CE 4237. Water Quality Engineering. (3 cr.; A-F or Audit; Every Fall) Applied analysis of water quality in natural systems. Review of mass-transport processes and approaches for solving water quality problems in lakes, estuaries, rivers, groundwater, and soil-sediment with TMDL (Total Maximum Daily Load) and remediation design applications. Applications in water and wastewater treatment. prereq: 3025 or instructor consent; no grad credit

CE 4246. Environmental Remediation Technologies. (3 cr.; A-F or Audit; Spring Odd Year) The course examines the principal applications and limitations of technologies designed for source control and removal of contaminants from soil, groundwater, and surface water. Topics include: introduction to hazardous waste, contaminant characteristics, a review of mass transport, partitioning and fate of contaminants, site characterization/assessment, regulatory requirement, the design and operation of current remediation technologies, advances in technological design, and emerging remediation technologies including biotechnology and nanotechnology. pre-req: CE 3025 or instructor consent; no grad credit

CE 4255. Senior Design. (4 cr.; A-F only; Every Fall & Spring) Formal written and oral reports describing design project. Complete professional documentation of results. prereq: instructor consent, no Grad cr

CE 4256. Design of Water and Waste Water Treatment Plants. (3 cr.; A-F or Audit; Every Spring) Introduction to design of municipal water and wastewater treatment plants. Unit operations approach sets the foundation by presenting conventional classic treatment trains. Hybrid systems, small community, and onsite systems will also be presented. prereq: 3025 or instructor consent

CE 4257. Municipal Solid Waste Management and Hazardous Waste Systems. (3 cr.; A-F or Audit; Every Fall) The class is an introduction to design solid waste management. Specific topics covered include: waste characterization, route planning, collection technologies, resource recovery systems (recycling), energy recovery (refuse derive fuel), landfill design (staging, leachate management, landfill gas management), and cover system design. An overview of soil and groundwater remediation technologies will also be provided. prereq: 3025 or instructor consent

CE 4315. Design of Traffic Systems. (3 cr.; A-F or Audit; Every Spring) This course aims to provide an in-depth knowledge of traffic control systems to optimize operational efficiency and safety of traffic flows. The theories of traffic flow modeling, simulation and control will be introduced as the basis for designing traffic systems. The process to analyze traffic systems performance will be studied with computer-based tools. The design methodologies for traffic control systems for arterials and freeways will be discussed and applied to real roadways in a simulated environment. A process to assess the effectiveness of design strategies on different types of highways will be studied and applied to sample corridors. prereq: 3316, no grad credit

CE 4316. Pavement Analysis and Design. (3 cr.; A-F or Audit; Every Fall) Analysis, behavior, performance, and structural design of pavements for highways and airfields will be discussed. Prominent pavement distress mechanisms, their causes, and remedial measures will be presented. Other topics include climate factors, rehabilitation, sustainability, and renewability in pavement engineering, life cycle design economics, and traffic loadings. prereq: 2017, 3027 and 3316; no grad credit

CE 4318. Pavement Maintenance, Rehabilitation, and Management. (3 cr.; A-F or Audit; Periodic Fall) Students will learn to evaluate the existing condition of the pavements, designing and selecting the appropriate rehabilitation strategy. Broadly, this course will include (i) assessment of the functional and structural conditions of pavements, (ii) pavement maintenance, repair and rehabilitation techniques, (iii) design of overlays, (iv) life cycle cost analysis of pavement overlays, and (v) introduction to pavement management. Different software such as BAKFAA, AASHTOW are Pavement ME Design, DRIP, BC0A-ME and MnPAVE will be utilized, wherever applicable, prereq: 3027, 3316 or instructor consent; no grad credit

CE 4326. Highway Planning and Design. (3 cr.; A-F or Audit; Every Fall) This course aims to provide an in-depth knowledge on highway network planning and design methodologies. Current planning and design methods for roadways will be introduced and used for class projects. The potential interrelationship between design parameters and traffic operation/safety will also be introduced for each design element. prereq: 3316; no grad credit

CE 4415. Geotechnical Design. (3 cr.; A-F or Audit; Every Fall) Study of geotechnical engineering topics related to design and construction of structures in contact with soils such as shallow and deep foundations, pile foundations and earth retaining structures. Also covered are topics related to site characterization and subsoil exploration and methods for ground improvement and modification. prereq: 3426, no grad credit

CE 4422. Numerical Modeling in Geotechnical Engineering. (3 cr.; A-F or Audit; Spring Even Year) This course covers theoretical and practical aspects of numerical modeling of problems in geotechnical engineering, using the finite element and finite difference methods, as implemented in commercial packages such as Abaqus and FLAC. The emphasis is on the solution of typical soil mechanics and geotechnical design problems. These include determining stresses in soils; solving shallow and deep foundation problems; seepage and consolidation problems; lateral earth pressure, retaining wall and slope stability problems; and seismic wave propagation in soils. prereq: 3426; no grad credit

CE 4426. Rock Mechanics. (3 cr.; A-F or Audit; Every Fall) Study of rock as an engineering material, including physical and mechanical characterization of intact rock and rock masses as they relate to civil and mining engineering applications. This also includes the study of effect of jointing and water in a rock mass, foundations of civil and mining engineering structures in rock, stability of cuts in rock, and excavation and support of surface and underground openings in rock. Laboratory testing is included in this course. prereq: 3426; no grad credit

CE 4515. Sustainable Design. (SUSTAIN; 3 cr.; A-F or Audit; Every Spring) Introduction to sustainable design and construction including LEED, materials, construction/transportation/production, life-cycle/service, rating systems, codes, regulations, economical issues and social issues. prereq: BSCE or BSCE or
BSIE or BSME and instructor consent; no grad credit

CE 4596. Cooperative Education II. (2 cr.; A-F or Audit; Every Fall, Spring & Summer) Continuation of practical work experience with an employer closely associated with student's academic area. Arranged by mutual agreement among student, department and employer. Formal written report of work completed must be submitted to the department at the end of the experience. prereq: CE candidate, instructor consent; no grad credit

CE 4991. Independent Study in Civil Engineering. (1-4 cr.; A-F or Audit; Every Fall, Spring & Summer) Directed study of special interest topics not available in the standard curriculum. Must be arranged with instructor before registration. May include readings, research and/or special projects. prereq: CE upper division status, instructor consent; no grade credit

CE 4995. Special Topics in Civil Engineering. (Various Titles to be Assigned). (1-4 cr.; [max 12 cr.]; A-F or Audit; Periodic Fall & Spring) Topics not available in the regular department curriculum. Topics may include specialities of the department or visiting faculty. prereq: no grad credit

CE 5027. Advanced Infrastructure Materials. (3 cr.; A-F or Audit; Every Spring) This course will cover advanced topics related to the behavior of Portland cement concrete and other special concretes. Topics to be covered include: Portland cement production and chemistry; supplementary cementitious materials, mixture design, concrete durability and repair techniques, and other special concretes. prereq: Graduate status or instructor consent

CE 5115. Structural Dynamics. (3 cr.; A-F or Audit; Periodic Fall & Spring) Response of single degree-of-freedom and multiple degree of freedom systems to vibrations, earthquakes, blast and impact. prereq: 3115 or grad student

CE 5127. Bridge Analysis and Design. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course will present AASHTO LRFD based highway bridge analysis, design and evaluation. prereq: CE 4115 and CE 4128 or Grad student

CE 5128. Prestressed Concrete Structures. (3 cr.; A-F or Audit; Periodic Fall & Spring) Design and behavior of prestressed concrete structures: materials and systems (including specifics for post-tensioned members), losses, flexure, shear, bond, deflections, partial prestressing, continuous beams. prereq: CE 4126 or grad student

CE 5131. Design of Wood & Masonry Structures. (3 cr.; A-F or Audit; Fall Even Year) This course addresses the design of wood, masonry and cold-formed steel structures and components based on applicable civil engineering design codes. For wood the course covers the design of flexural and compressive members, fasteners and connections, shear walls and diaphragms. For masonry, topics include the components and hardware of masonry buildings, behavior and design of masonry wall types, design of beams, columns, reinforcement details, shear walls, roof and floor diaphragms and anchor bolts. For Col-formed steel, topics include elastic buckling properties and subsequent strength prediction for beams and columns, roof and wall systems, bracing details and connections. prereq: 3115, 4126 or grad student

CE 5135. Advanced Reinforced Concrete and Steel Design. (3 cr.; A-F or Audit; Every Spring) This course will be half semester each of advanced reinforced concrete and steel design topics such as: slender concrete columns, two-way concrete slab systems, design of concrete bearing and shear walls, stability of steel frames, steel members subjected to torsion, bolted and welded steel connections, steel plate girders, and composite design and construction. pre-req: 3115, 4115, 4126

CE 5137. Advanced Structural Analysis and Design. (3 cr.; A-F or Audit; Periodic Fall & Spring) Advanced topics in structural analysis and design. Topics include: matrix analysis, introduction to finite elements, design of prestressed concrete, design of two-way concrete slabs, and design of steel plate girders. prereq: 4115, 4126; grad student

CE 5201. Water Policy. (3 cr.; A-F or Audit; Every Fall) Socio-cultural, legal, and economic factors that affect water resources management. Historical trends in water policy, resulting water laws in the United States. Federal, state and local institutional structures for water management. prereq: graduate student or instructor consent

CE 5203. Stream Crossing and Culvert Design. (3 cr.; A-F or Audit; Fall Odd Year) Overview of road-stream crossing design with emphasis on stream simulation for aquatic organism passage. Includes field data collection, analysis, and design of road-stream crossings, and traditional culvert hydraulic analysis and design. Meets concurrently with 2 cr. GEOL course (GEOL 5603) that excludes culvert hydraulic analysis and design. pre-req: CE 3225 or grad student; instructor consent

CE 5216. Applications in Environmental Modeling. (3 cr.; A-F or Audit; Periodic Spring) Theory and application of environmental chemodynamics. Transport processes and equilibrium across natural phases including water, air, and soil using analytical and numerical modeling approaches. Economic and reliability analysis for hydrosystems using linear and non-linear programming with applications to water supply and water excess engineering. prereq: graduate status or instructor consent

CE 5226. Water Resources Engineering. (3 cr.; A-F or Audit; Every Spring) Application of engineering economics, risk analysis, and operations research to the planning and management of water systems; major topics include flood control, hydroelectric power, water supply, multiobjective planning, sustainability and climate change. prereq: 3225, grad student

CE 5237. Water Quality Engineering. (3 cr.; A-F or Audit; Every Fall) Applied analysis of water quality in natural systems. Review of mass-transport processes and approaches for solving water quality problems in lakes, estuaries, rivers, ground water, and soil-sediment with TMDL (Total Maximum Daily Load) and remediation design applications. Applications in water and wastewater treatment. prereq: 3025 or CHEM 1155, or graduate student or instructor consent

CE 5241. Water Chemistry. (3 cr.; A-F or Audit; Every Fall) Water is critical component of environmental systems, and the chemistry that occurs in water is a rich subject. This class focuses on water chemistry in both natural and engineered systems. Topics include a review of thermodynamics and equilibrium, acids and bases, titrations, the carbonate system, solubility of minerals, metal ion complexation, oxidation/reduction chemistry, and descriptions of adsorption. Principles are applied to chemistry in water treatment, nutrient cycling, organic matter, and organic pollutants. Both chemical equilibrium and chemical kinetics are explored. Students will be introduced to software that can be used to solve water chemistry problems. The class is targeted at seniors and graduate students. pre-req: CE 3025 or CHEM 1155, or graduate student or instructor consent

CE 5246. Environmental Remediation Technologies. (3 cr.; A-F or Audit; Spring Odd Year) The course examines the principal applications and limitations of technologies designed for source control and removal of contaminants from soil, groundwater, and surface water. Topics include: introduction to hazardous waste, contaminant characteristics, a review of mass transport, partitioning and fate of contaminants, site characterization/assessment, regulatory requirement, the design and operation of current remediation technologies, advances in technological design, and emerging remediation technologies including biotechnology and nanotechnology. pre-req: CE, WRS, IBS graduate students or instructor consent

CE 5251. Design of Chemical Physical Unit Operations in Water Treatment. (4 cr.; A-F or Audit; Periodic Fall & Spring) Detailed design of chemical/physical unit operations in municipal water treatment. Classic surface water treatment, ion exchange, activated carbon, membrane systems, and chlorination will be covered at a design level. Labs will provide pilot scale experience with selected unit operations. prereq: 4256 or instructor consent

CE 5315. Design of Traffic Systems. (3 cr.; A-F or Audit; Every Spring) This course provides an in-depth knowledge of design principles and methodologies for

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traffic control systems to optimize operational efficiency and safety of traffic flows. The theories of traffic flow modeling, simulation and control are introduced as the basis for designing traffic systems. The process to analyze traffic systems performance is applied with computer-based tools. The design methodologies for traffic control systems for arterials and freeways are discussed and applied to real roadways in a simulated environment. A process to assess the effectiveness of design strategies on different types of highways is evaluated and applied to sample corridors. prereq: 3316 or grad student

CE 5316. Pavement Analysis and Design. (3 cr. ; A-F or Audit; Every Fall)
Analysis, behavior, performance, and structural design of pavements for highways and airfields will be discussed. Prominent pavement distress mechanisms, their causes, and remedial measures will be presented. Other topics include climate factors, rehabilitation, sustainability, and renewability in pavement engineering, life cycle design economics, and traffic loadings. prereq: 3027, 3316; grad student

CE 5317. Traffic Flow Theory and Modeling. (3 cr. ; A-F or Audit; Periodic Fall & Spring)
Vehicle detection and traffic data collection methods. Measure for traffic system effectiveness, drive behavior theory, and microscopic traffic flow theory and modeling methodologies, simulation models and optimal calibration methods. Application of simulation models. prereq: 4315 or grad student

CE 5318. Pavement Maintenance, Rehabilitation, and Management. (3 cr. ; A-F or Audit; Periodic Fall)
Students will learn to evaluate the existing condition of the pavements, designing and selecting the appropriate rehabilitation strategy. Broadly, this course will include (i) assessment of the functional and structural conditions of pavements, (ii) pavement maintenance, repair and rehabilitation techniques, (iii) design of overlays, (iv) life cycle cost analysis of pavement overlays, and (v) introduction to pavement management. Different software such as BAKFAA, AASHTOW are Pavement ME Design, DRIP, BCOA-ME and MnPAVE will be utilized, wherever applicable. prereq: 3027, 3316 or CE graduate student

CE 5326. Highway Planning and Design. (3 cr. ; A-F or Audit; Every Fall)
This course aims to provide an in-depth knowledge on highway network planning and design methodologies. Current planning and design methods for roadways will be introduced and used for class projects. The potential interrelationship between design parameters and traffic operation/safety will also be introduced for each design element. prereq: 3316 or graduate student

CE 5420. Advanced Soil Mechanics. (3 cr. ; A-F or Audit; Spring Odd Year)
This course will cover advanced topics related to the behavior of cohesive and cohesionless soils. Topics to be covered include: stress and strength concepts; measurement devices; shear strength of sands, gravels, and rockfills; shear strength of saturated clay; and shear strength of silts. Will require development of graduate project level requirements of the course, prereq: 3426, 4415 (concurrent registration is acceptable) or CE graduate student

CE 5421. Applied Geostatistics. (3 cr. ; A-F or Audit; Spring Even Year)
The course teaches theoretical and practical aspects of geostatistics; with primary focus on analysis of information gathered in site investigations for civil engineering projects, although the concepts taught in the course also have direct application to economic geology and ore-mining investigations. Theoretical aspects of the course center on description and modeling of spatial variability and interpolation attributes of interest at unsampled locations; they also focus on sampling design and incorporation of different types of information (continuous, categorical) in geostatistical prediction. Practical implementation of concepts taught involves use of geostatistical packages in the software R and Matlab (also commercial software packages commonly used in the civil and mining engineering industry such as ArcGIS, Vulcan, etc., will be addressed.) Will require development of a graduate level project, in addition to the undergraduate level requirements of the course. prereq: MATH 1297 or STAT 2411 or 3411 or CE graduate student

CE 5422. Numerical Modeling in Geotechnical Engineering. (3 cr. ; A-F or Audit; Spring Even Year)
This course covers theoretical and practical aspects of numerical modeling of problems in geotechnical engineering, using the finite element and finite difference methods, as implemented in commercial packages such as Abaqus and FLAC. The emphasis is on the solution of typical soil mechanics and geotechnical design problems. These include determining stresses in soils; solving shallow and deep foundation problems; seepage and consolidation problems; lateral earth pressure, retaining wall and slope stability problems; and seismic wave propagation in soils. Will require development of a graduate level project in addition to the undergraduate level requirements of the course. prereq: 3426 or CE Graduate Student or instructor consent

CE 5426. Rock Mechanics. (3 cr. ; A-F or Audit; Every Fall)
Study of rock as an engineering material, including physical and mechanical characterization of intact rock and rock masses as they relate to civil and mining engineering applications. This also includes the study of effect of jointing and water in a rock mass, foundations of civil and mining engineering structures in rock, stability of cuts in rock, and excavation and support of surface and underground and openings in rock. prereq: 3426, Grad Student

CE 5515. Sustainable Design and Construction (SUSTAIN). (3 cr. ; A-F or Audit; Every Spring)
Introduction to sustainable design and construction including LEED, materials, construction/transportation/production, life-cycle/service, rating systems, codes, regulations, economical issues and social issues. prereq: BSCE or BSCH or BSECE or BSIE or BSME or Grad student and instructor consent; meets DLE req of Sustainability

CE 5525. Decision, Risk and Reliability. (3 cr. ; A-F or Audit; Periodic Spring)
An introduction to modeling uncertainties in engineering applications. Will cover tools for risk-based design and decision making, including uncertainty modeling and decision making as applied to civil engineering systems. pre-req: STAT 3411 or grad student or instructor consent

CE 5555. Project Credits: Master of Engineering (Civil). (3-6 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Master of Engineering project work as determined by faculty advisor and student with approval by the department director of graduate studies. prereq: Civil Engineering MEng Student

CE 5991. Graduate Independent Study in Civil Engineering. (1-12 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Directed study of special interest topics not available in the standard curriculum. Must be arranged with instructor before registration. May include readings, research and/or special project. prereq: CE MEng candidate, instructor consent

CE 5995. Special Topics in Civil Engineering: (Various Titles to be Assigned). (1-4 cr. ; max 12 cr. ; A-F or Audit; Periodic Fall & Spring)
Topics not available in the regular department curriculum. Topics may include specialties of the department or visiting faculty. prereq: grad student

CE 6020. Graduate Seminar. (1 cr. ; S-N only; Every Fall & Spring)
The course will be required course for graduate students in the CE program. Students will participate in seminars organized by the department on contemporary technical topics of research and practice of civil engineering. Invited speakers will address technical topics and also topics related to ethics, leadership, and cultural global issues in civil engineering. The course requires students to complete assignments related to the outcomes of the course and give a presentation on their research or project topics. pre-req: Graduate student

CE 8094. Civil Engineering Master's Project. (1-6 cr. ; max 24 cr. ; S-N or Audit; Every Fall, Spring & Summer)
Master's project: Research or independent study in geotechnical, structural, transportation, and water resources and environmental engineering. Investigations, reports, tests, or designs are acceptable. prereq: Graduate student

CE 8333. FTE: Master's. (1 cr. ; No Grade Associated; Every Fall, Spring & Summer)
Advanced masters in graduate school. pre-req: Master's students, adviser and DGS consent

CE 8777. Thesis Credits: Master’s. (1-12 cr. [max 24 cr.]; No Grade Associated; Every Fall, Spring & Summer)
Master's thesis credits. prereq: graduate student; max 12 cr per semester or summer, 10 cr total required (Plan A only)

**Coaching (CC)**

CC 3174. Coaching and Officiating Soccer. (2 cr.; A-F or Audit; Periodic Spring)
Coaching and officiating offenses and defenses; conditioning programs; coaching and officiating philosophies. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3170. Coaching and Officiating Football. (2 cr.; A-F or Audit; Periodic Spring
Systems of offense and defense, strategy, and methods of organizing practices and working with team members. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3171. Coaching and Officiating Basketball. (2 cr.; A-F or Audit; Periodic Fall)
Fundamentals, styles of offense and defense, training suggestions. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3172. Coaching and Officiating Volleyball. (2 cr.; A-F or Audit; Periodic Spring)
Coaching and officiating offenses and defenses; conditioning programs; coaching and officiating philosophies. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3173. Coaching and Officiating Track and Field. (2 cr.; A-F or Audit; Periodic Spring
Fundamentals, mechanical analysis of events, training techniques and strategies. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3177. Coaching and Officiating Softball. (2 cr.; A-F or Audit; Periodic Spring
Fundamentals, practice sessions, training techniques, and offensive and defensive strategies. prereq: Coaching minor or instructor consent

**Coaching (CC)**

CC 3178. Coaching and Officiating Track and Field. (2 cr.; A-F or Audit; Periodic Spring
Fundamentals, mechanical analysis of events, training techniques and strategies. prereq: Coaching minor or instructor consent

**College of Liberal Arts (CLA)**

CLA 1199. Applied Leadership Practicum. (1-3 cr.; S-N only; Every Summer)
Course for students who are RockStars at Bulldog Welcome Week. For information on being a RockStar contact the UMD Office for Students in Transition. prereq: instructor consent

**Communication (COMM)**

COMM 1000. Human Communication Theory. (SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring
Introduction to fundamental concepts, models, and theories of human communication. Issues concerning verbal and nonverbal symbolic processes, language and meaning, and the relationship between communication and understanding. Communication processes and problems in various contexts. Liberal Education social science credit will be effective fall 2015.

COMM 1010. Persuasion. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring
Introduction to the analysis of social scientific persuasion techniques used to influence attitudes, perceptions, knowledge, and behavior of others in society.

COMM 1112. Public Speaking. (COMM & LAN; 3 cr.; A-F or Audit; Every Fall & Spring
Application of the theoretical bases of rhetoric to the public speaking situation. prereq: 1112 or 1511

COMM 1500. Media and Society. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Fall, Spring & Summer
Historical survey of media genres, and examination of influence of contemporary media on society.

COMM 1511. Honors: Public Speaking. (COMM & LAN; 3 cr.; A-F only; Periodic Fall & Spring
Application of the theoretical bases of rhetoric to the public speaking situation. prereq: Honors student

COMM 1600. Argumentation and Debate: A Practical Approach. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall & Spring
Utilizes a symbolic action approach to introduce the theory and practice of argumentation, particularly within practical contexts; aiming at the related goals of making students more effective arguers, more critical consumers of arguments, and more critical thinkers generally.

COMM 2025. Communication Inquiry: Rhetorical and Historical Methods. (3 cr.; A-F or Audit; Every Fall & Spring
Exploration/survey of rhetorical and historical approaches to understanding the role that communication plays in social influence. prereq: Communication major, minimum 30 credits

COMM 2030. Communication Inquiry: Social Scientific Methods. (3 cr.; A-F or Audit; Every Fall & Spring
Introduction to social scientific inquiry related to the study of communication, and will provide an overview of research methods and an introduction to statistics. prereq: Comm major, minimum 30 credits

COMM 2101. Foundations of Mass Communication. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall, Spring & Summer
Theories, research, regulation, and ethical concerns surrounding contemporary mass media. Identifies U.S. media's role within the international marketplace. Survey of contemporary media content, industry structures, technology, and delivery systems.

COMM 3115. Persuasion and Argumentation in Public Speaking. (3 cr.; A-F or Audit; Every Fall & Spring
Advanced theories. Developing persuasive strategies, carefully managing logical and argumentational structures within the speech, and fostering critical thinking tools in creation, analysis, and evaluation of persuasive speech. prereq: 1112 or 1511

COMM 3116. Professional Communication. (3 cr.; A-F or Audit; Every Fall & Spring
Theory and practice of communication skills related to the workplace. Skill development in presentational speaking and vocational interviewing. prereq: 1112 or 1511

COMM 3200. Interpersonal Communication Theory. (3 cr.; A-F or Audit; Every Fall & Spring
Analysis of the role communication plays in interpersonal relationships.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Role of communication in developing, maintaining, and changing personal relationships. prereq: 1000 or 1222

COMM 3205. Relationship Communication. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Study of advanced interpersonal communication skills in context of family and gender issues. prereq: 1222

COMM 3210. Group Communication. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Small group approaches to problem management. Useful for anyone intending to participate in decision-making groups. prereq: Minimum 30 credit, communication major or minor or instructor consent

COMM 3211. Communication and Technology in the Information Age. (3 cr.; A-F or Audit; Periodic Fall & Spring) Explores communication technologies in the information age. Content includes advanced communication skills and new technologies used in contemporary organizations; explores implications of those technologies for human communication; and provides hands-on experience within a theoretical framework.

COMM 3215. Conflict Management. (3 cr.; A-F or Audit; Periodic Fall & Spring) Application of interpersonal conflict management theory and skills to small group, organizational, and community conflicts. prereq: Minimum 30 credits, communication major or minor or instructor consent

COMM 3223. Communication and Creativity. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Examines the relationship between communication and creative processes in an array of contexts, including artistic, professional, social, interpersonal and civic arenas. Content includes techniques of deliberate creativity; analysis of cognitive theory as it relates to creativity, addressing both "rational" (critical) and "non-rational" (intuitive) approaches to risk-taking and exploration. prereq: Minimum 30 credits or instructor consent

COMM 3225. Listening Across Difference. (3 cr.; A-F or Audit; Periodic Spring) Examines the art and science of listening strategies across different contexts, including relational, rhetorical, and digital situations. Review, analysis, evaluation, and development of listening approaches and skills to constitutively create better social worlds.

COMM 3230. Mindful Communication. (3 cr.; A-F or Audit; Periodic Fall & Spring) Mindfulness consists of the capacity to maintain present-centered, nonjudgmental, awareness in everyday life. This discussion and application-based course covers theoretical and practical implications associated with the use of mindfulness techniques for intrapersonal and interpersonal communication. Students have the opportunity to implement mindfulness practices throughout the semester as an experiential way of observing how mindfulness enhances self- and relational well-being via an enhanced ability to communicate effectively across a variety of contexts.

COMM 3295. Special Topics: Interpersonal Communication (Various titles to be assigned). (3 cr. [max 12 cr.]; A-F only; Periodic Fall & Spring) Interpersonal communication topics not included in regular curriculum. prereq: no grad credit

COMM 3300. Teaching Assistantship in Communication. (1-3 cr.; S-N only; Every Fall, Spring & Summer) Practical experience in teaching beginning courses in the department. Students serve as intern teachers assisting the instructor in administration of the course. prereq: instructor consent

COMM 3310. Research Assistant in Communication. (1-6 cr.; S-N only; Every Fall, Spring & Summer) Practical experience in assisting communication faculty in ongoing research projects. prereq: instructor consent

COMM 3395. Special Topics: (Various Titles to be Assigned). (3 cr. [max 15 cr.]; A-F or Audit; Periodic Spring) Topics not included in regular curriculum.

COMM 3400. Health Communication. (3 cr.; A-F only; Every Fall & Spring) Survey course examines the critical role communication plays in health promotion, specifically in the area of doctor-patient interaction and health campaigns. Important communicative issues such as the social construction of health, the role of culture in health and healing, health disparities, media literacy, and social support are addressed.

COMM 3405. Health Campaigns. (3 cr.; A-F or Audit; Every Spring) Survey course examines how individual and community models of health behavior change are used to design, implement, and evaluate campaigns that promote healthy behaviors and reduce high-risk health behaviors.

COMM 3505. Media Communications. (3 cr.; A-F or Audit; Every Fall & Spring) Survey of journalistic, critical, public relations and advertising writing techniques. Students write radio essays, newsletter articles, news stories, press releases. They also prepare communication strategies for a mini advertising campaign, write a movie review and develop a feature article for a newspaper. prereq: WRIT 1120

COMM 3510. Ethics in Human Communication. (3 cr.; A-F or Audit; Periodic Fall & Spring) Examination of the recurring ethical questions faced by people as we communicate both in interpersonal/non-professional contexts and as practitioners in communication professions. prereq: 1112 or 1511; credit will not be granted if already received for CLA 1101

COMM 3515. Communication and Popular Culture. (3 cr.; A-F or Audit; Every Fall & Spring) Critical examination of the relationships between communication and popular culture focusing on the products of various mass media (films, music recording, television shows, comic books, etc.).

COMM 3520. Media Effects. (SOC SCI; 3 cr.; A-F only; Every Fall & Spring) Theory and research on the effects of media. Topics include media violence effects, sexual media content, fight reactions to media, news and political content effects, the impact of stereotyping, advertising effects, and the impact of new media technologies. prereq: credit will not be granted if already received for COMM 2102

COMM 3525. Deciding What’s News. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Review history of news in the United States, examine definitions of news, engage in critical evaluations of news in its various genres (news magazines, infotainment, investigative journalism, checkbook journalism, tabloid journalism, etc.).

COMM 3530. Dark Side of Media and Communication. (CDIVERSITY; 4 cr.; Student Option; Every Fall, Spring & Summer) While various media and technologies have made some significant positive contributions to modern society, some have chosen to use them as tools for dark purposes. This course was designed to investigate how certain uses of media and technology lead to unfortunate outcomes. These outcomes are grouped around 1) Commodification, 2) Exploitation, 3) Threats to individual health and privacy, and 4) Threats to Democracy.

COMM 3535. Intercultural Communication. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) This is a skills course in which students learn how to engage in effective intercultural communication and relationships. Students apply what they are learning by participating in intercultural communication with classmates from a wide variety of cultures. Students learn about variations in cultural practices and values and how social, political and economic forces have both been influenced by and influence those cultures. prereq: credit will not be granted if already received for 2929

COMM 3550. Children and Media. (3 cr.; A-F or Audit; Every Fall & Spring) Theory and research on the impact of media on children.

COMM 3555. Mass Media Addiction. (3 cr.; A-F or Audit; Periodic Summer) Examines the research and theory related to the social, psychological, and communicative rationales for becoming addicted to the mass media, centering on tele-visual media, including the internet.

COMM 3560. Video Game Entertainment. (3 cr.; A-F or Audit; Every Fall & Summer) Research and theory on video games, including work on content, uses, and effects. Overviews of game history, industry economics, design, and policy. Hands-on exposure to game technologies. Information about careers in video games.
COMM 3570. Telling Stories about the Holocaust using Memoir and Testimony. (3 cr.; A-F or Audit; Every Fall & Spring)
This course uses Holocaust testimonies and memoirs as the means by which to learn about the Holocaust. We will look at noteworthy documentaries as an additional frame of reference. We will relay on these records by and about targets/victims/survivors and participant/perpetrators in an effort to understand how the Holocaust came about and how it influenced the rest of the twentieth century as well as the twenty-first century.

COMM 3595. Special Topics: Media Communication. (3 cr. [max 12 cr.]; A-F only; Periodic Fall & Spring)
Media communication topics not included in regular curriculum.

COMM 3610. Philosophy and Rhetoric. (HUMANITIES; 3 cr.; A-F or Audit; Every Fall)
Introduction to the philosophy and history of rhetoric from ancient to modern times, including rhetoric's role in reasoning about values, defining the duties and methods of citizenship, and shaping self-awareness. Aims at a philosophical appreciation of the problem of communication from Babel to the Electronic Age. preq: credit will not be granted if already received for COMM 1625

COMM 3612. Rhetorical Criticism. (3 cr.; A-F or Audit; Every Fall & Spring)
Survey of approaches to rhetorical analysis of communicative acts, events, and artifacts. preq: 1112 or 1511, minimum 60 credits

COMM 3615. Analysis of Public Discourse. (3 cr.; A-F or Audit; Every Fall & Spring)
Guided historical, critical, and theoretical investigation of public discourse, examining the rhetorical practice manifest in traditional models of public oratory, mass media texts, and messages that address us via new media. Topics and periods vary. preq: credit will not be granted if already received for COMM 2505

COMM 3620. Controversy in the Boundary Waters. (SUSTAIN; 3 cr.; A-F or Audit; Every Summer)
Considers the rhetorical and political processes conditioning the debate over the Boundary Waters Canoe Area’s wilderness designation. Culminates in a field trip to the BWCA, and a group project pertaining to contemporary environmental rhetoric.

COMM 3625. Rhetoric of Globalization. (GLOBAL PER; 3 cr.; A-F only; Periodic Fall, Spring & Summer)
Study and reflection of global civil society, with special focus on the ways that new and changing forms of communication have altered the meaning of a democratic press, civic participation, human rights and shared experience. preq: 1112

COMM 3695. Special Topics in Rhetoric Communication. (3 cr. [max 12 cr.]; A-F only; Periodic Fall & Spring)
Rhetoric topics not included in regular curriculum.

COMM 3700. Interpersonal Influence. (3 cr.; A-F or Audit; Every Fall & Spring)
Review of social scientific theories and research on person-to-person persuasion techniques used to influence attitudes, perceptions, knowledge, and behavior of others. Focus is on theoretical processes and effects on individuals and society in a variety of contexts.

COMM 3800. Community Empowerment in South India - Study Abroad. (GLOBAL PER; 4 cr.; A-F only; Periodic Summer)
This course will take students to Bangalore, India where they will learn about the history, culture of India and examine processes of social change. Bangalore has grown tremendously in recent years as the city has become the center of India’s high-tech economy. However, the benefits of this growth have not been equally distributed: slums that house millions of the city’s poorest residents are located alongside gleaming new office towers and shopping malls. In this course, students will examine the causes of these disparities and learn how disenfranchised groups such as women, lower caste members, tribal communities, and religious minorities are advocating for their social and economic rights. Students will be challenged to think about how realities in India mirror realities in the United States today, and how they too can become agents of change in their communities. preq: 3.0 GPA, 30 credits, & instructor consent; also visit the UMD Study Abroad office

COMM 4100. Ecological Communication. (3 cr.; A-F only; Periodic Fall)
An advanced seminar on the dynamic relationship between ecology and communication. This course considers the impact that human communication has on ecological systems as well as the implications of ecological thinking for the study of human communication; explore human and other-than-human modes of communication; and provides opportunities to interrogate ecological communication practices in northeastern Minnesota.

COMM 4210. Theories of Intercultural Communication. (3 cr.; A-F or Audit; Every Fall & Spring)
Study major theories and concepts of intercultural communication, including national, racial, and ethnic similarities and differences in communication practices, cultural beliefs and values; issues of identity, power, conflict, and control.

COMM 4220. Interpersonal Communication & Health Outcomes. (3 cr.; A-F or Audit; Every Fall & Spring)
This course explores how interpersonal communication choices can impact physical and health outcomes, how physical and psychological states can influence our communication tendencies, and what therapeutic practices currently exist to enhance interpersonal relationships.

COMM 4394. Directed Research in Communication. (1-6 cr. [max 36 cr.]; A-F only; Every Fall, Spring & Summer)
Individual research project, written under the supervision of a regular faculty member, to result in a research paper. preq: instructor consent

COMM 4397. Internship in Communication. (1-8 cr.; S-N only; Every Fall, Spring & Summer)
Students work in pre-approved program with a public agency, private organization, or other service agency; work must be in specific area of communication. preq: instructor consent; no grad credit

COMM 4399. Directed Projects in Communication. (1-6 cr.; S-N only; Every Fall, Spring & Summer)
Individual projects in the communication discipline, undertaken under the supervision of a regular faculty member. preq: instructor consent; no grad credit

COMM 4500. History of Rhetoric. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Development of rhetorical thought as expressed by representative writers. preq: 1112 or 1511 or instructor consent; no Grad credit

COMM 4505. Media Theory and Research. (3 cr.; A-F or Audit; Every Fall & Spring)
Theoretical concepts and research perspectives currently used to understand intricacies of a mediated society. Introduction and application of basic research methods to study questions concerning impact of media on society and individuals. preq: 1500 or 2101, minimum 60 credits or instructor consent; no Grad credit

COMM 5000. Senior Seminar. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Advanced study and individual research on a selected topic or theme in communication; senior seminar course for communication majors. preq: 1000, 1112 or 1115, 2025, 2030 with a C or better; Min 90 cr, Comm major, instructor consent

COMM 5391. Independent Study in Communication. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Individual research project written under supervision of communication graduate examining faculty member, to result in a research project. preq: instructor consent

Communication Sci/Disorders (CSD)

CSD 1100. Phonetics. (2 cr.; A-F only; Every Spring & Summer)
Study and practice of International Phonetic Alphabet. English and non-English speech sounds as they occur separately and in connected speech. Variations in speech production as related to regional and/or class distinctions.

CSD 2230. Introduction to Human Communication Disorders. (SOC SCI, DIVERSITY; 3 cr.; Student Option; Every Fall, Spring & Summer)
Receptive and expressive human communication disorders. Importance of communication to human behavior; influence
that communication disorders exert on broad spectrum of human activities. Professional roles and responsibilities of speech-language pathologists and audiologists.

CSD 2400. Clinical Observation of Communication Disorders. (1 cr.; A-F or Audit; Every Fall & Summer) All undergraduate students majoring in Communication Sciences and Disorders are expected to complete 25 hours of clinical observation prior to enrollment in clinical practice. These observations may be live or video recorded sessions that occur in a variety of clinical settings. This course will provide students with an opportunity to observe the assessment and treatment of individuals with communication disorders that encompass all ages and across the big nine categories of communication disorders. prereq: 2230 or instructor consent

CSD 3010. Introductory Statistics for the Behavioral Sciences. (3 cr.; A-F or Audit; Every Fall) Descriptive statistics; sampling techniques and statistical inference; applications of simple and factorial design; analysis of variance; nonparametric statistics; and introductory correlational analysis used in the behavioral sciences. prereq: CSD candidate or non-CSD candidate with a minimum of 60 credits and instructor consent or instructor consent; credit will not be granted if already received for CSD 4000

CSD 3103. Anatomy of Speech and Hearing Mechanisms. (3 cr.; A-F only; Every Fall) Anatomy and physiology as they relate to hearing and speech processes including respiration, phonation, and articulation. prereq: CSD candidate or instructor consent


CSD 3131. Language Development. (4 cr.; A-F or Audit; Every Fall) Emphasis on the acquisition and development of language, verbal and nonverbal, as children learn to communicate effectively by selecting the most appropriate communication strategies. prereq: CSD candidate or instructor consent

CSD 3150. Fundamentals and Clinical Applications of Speech Science. (3 cr.; A-F or Audit; Every Fall) Basic principles of speech science including, acoustic characteristics of speech; physiology of respiration, phonation, and resonance; and theories of speech perception and production. Clinical and research applications of speech science will also be discussed. prereq: CSD candidate or instructor consent

CSD 3160. Fundamentals of Hearing Science. (3 cr.; A-F only; Every Spring) Introductory study of acoustics and psychoacoustics. prereq: 3103, CSD candidate or instructor consent

CSD 3200. Articulation and Phonological Disorders. (3 cr.; A-F only; Every Spring) Differential diagnosis, assessment, and treatment considerations for articulation and phonological disorders. Outside observation required, prereq: 1100, CSD candidate or instructor consent

CSD 3232. Language Disorders. (3 cr.; A-F or Audit; Every Spring) Focuses on the functional applications in the assessment and intervention of language disorders including a review of the various formal and informal assessment tools, and the approaches to language intervention. prereq: 3131, CSD candidate or instructor consent

CSD 3241. Foundations of Treatment in Communication Disorders I. (3 cr.; A-F or Audit; Every Fall) Focuses on foundational principals of treatment, applicable to a variety of communication disorders. prereq: 3103, 3131, 3150, 3200, CSD candidate or instructor consent

CSD 4097. Introduction to Clinical Practicum in Communication Disorders. (1 cr.; A-F only; Every Spring) Clinical practicum with speech, language, and/or hearing impaired persons in an on-campus clinic under supervision of an ASHA-certified speech-language pathologist. (1 hr seminar per wk) prereq: CSD candidate, 4232 and department consent

CSD 4110. Introduction to Applied Clinical Methods in CSD. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Class includes discussions, demonstrations, and case studies in applying clinical methods. Subject matter complements CSD 4197: Undergraduate Practicum in CSD. prereq: 3241, instructor consent; no grad credit

CSD 4150. Neuroanatomy and Neuropsychology in Communication Sciences and Disorders. (3 cr.; A-F or Audit; Every Spring) This course covers the neuroanatomy and neuropsychology of the human brain as a foundation for understanding communication and swallowing disorders as well as their diagnosis and treatment. Students will learn about the anatomy of the brain, the basic physiology of nerve cells, the central nervous system, peripheral nervous system and their specific contributions to human cognition, communication, and swallowing functions. prereq: 3103, 3150, 3160 or instructor consent; no grad credit

CSD 4197. Clinical Practicum in Communication Disorders. (1 cr. [max 2 cr.]; A-F only; Every Fall, Spring & Summer) Supervised undergraduate clinical practicum in on-campus clinic under supervision of an ASHA-certified speech-language pathologist. prereq: 3241 with C grade or better, CSD candidate or instructor consent; no grad credit

CSD 4200. Introduction to Fluency Disorders. (3 cr.; A-F or Audit; Every Spring) Etiologies, characteristics, and development of stuttering and other fluency disorders. prereq: 2230, CSD candidate or instructor consent, no grad credit

CSD 4241. Foundations of Treatment in Communication Disorders II. (3 cr.; A-F or Audit; Every Spring) In this course, students follow a case from assessment through treatment. Focus is on applying research and internal case information for evidence-based practice, clinical decision-making and culturally competent clinical practice. Class includes discussion, demonstrations, and case studies in applying clinical methods. pre-q: CSD 3241; no grad credit

CSD 4400. Hearing Disorders and Evaluation. (3 cr.; A-F only; Every Fall) Characteristics, development, and etiologies of typical auditory pathologies. Overview of basic hearing assessment and diagnostic techniques. Clinical observation required. prereq: 3103, 3160, CSD candidate or instructor consent

CSD 4500. Voice Disorders. (3 cr.; A-F or Audit; Every Fall) Theoretical and practical study of voice and voice disturbances in children and adults. prereq: CSD candidate

CSD 5010. Portfolio Development I. (0.5 cr.; A-F only; Every Fall) Introduction to the ongoing process of developing and updating a graduate student portfolio that may be used for purposes of reflection and self-assessment, documentation of professional organization designated competencies. Used for ASHA standards prereq: CSD Grad student or instructor consent

CSD 5011. Portfolio Development II. (0.5 cr.; A-F or Audit; Every Spring) Graduate Students in CSD present their completed portfolio, highlighting achievement toward academic standards, their self-awareness of their growth, their preparation for entering the profession of speech-language pathology. Students explore options and responsibilities for continued expansion of competence as future professionals. This course is to be taken in the final semester of the program, and follows Portfolio Development I. prereq: CSD 5010 or instructor consent

CSD 5091. Independent Study. (1-3 cr.; Student Option; Every Fall & Spring) Directed study, readings, and/or projects of student interest in communication disorders. prereq: CSD candidate with 90 cr or CSD Grad student

CSD 5095. Special Topics: (Various Titles to be Assigned). (0.5-3 cr.; max 18 cr.) Special topics of interest to speech-language pathologists, audiologists, special educators, and related professionals. Workshop and seminar format.

CSD 5097. Off campus Professional Practicum in Communication Sciences and Disorders. (2-6 cr. [max 12 cr.]; A-F or Audit; Every Spring)
Speech-language pathology practicum in an off-campus setting under an ASHA-certified language pathologist. This experience focuses on special interests of the individual student, and allows for comparison of practice settings to prior clinical experiences. prereq: instructor consent

**CSD 5100. Research Methods in Communication Disorders.** (1-2 cr. [max 3 cr.]; A-F or Audit; Every Fall & Spring)
Especially designed for new CSD graduate students to introduce them to the research process. Topics will include generating a research question, experimental designs, data collection, analysis, and interpretation, and writing the research paper. Students will conduct a guided class research project and begin their Plan B project. prereq: CSD Grad

**CSD 5142. Introduction to Diagnosis of Communication Disorders.** (3 cr. ; A-F or Audit; Every Fall)
General issues of evaluation and diagnosis of communication disorders pertinent to all ages and disorders. prereq: CSD Graduate or instructor consent; credit will not be granted if already received for 4142

**CSD 5200. Dysphagia.** (3 cr. ; A-F only; Every Spring)
Anatomy and physiology of normal and disordered deglutition. Etiology, diagnosis, and management of swallowing disorders, including head and neck cancer. prereq: CSD grad or instructor consent

**CSD 5205. Pediatric Dysphagia.** (1 cr. ; A-F or Audit; Every Summer)
Students will learn the anatomy and physiology of normal pediatric swallowing; study etiology, assessment, diagnosis, and management of pediatric swallowing and feeding disorders. prereq: CSD Graduate Student or instructor consent

**CSD 5230. Advanced Applications in Communication Modalities.** (4 cr. ; A-F or Audit; Every Summer)
Advanced seminar and clinical practicum of augmentative and alternative communication (AAC) systems, assistive technologies and visual communication modalities. The decision-making process for identifying AAC candidates, selecting appropriate communication modality systems and developing effective communication programs and strategies involving visual communication modalities. prereq: CSD grad or instructor consent

**CSD 5250. Seminar in Augmentative and Alternative Communication.** (1 cr. ; A-F only; Every Fall)
Examines the assessment and treatment issues for speech language pathologists working with individuals requiring augmentative and alternative communication systems. prereq: CSD grad student or instructor consent

**CSD 5260. Seminars in Orofacial Disorders.** (2 cr. ; A-F only; Every Summer)
This course will focus on the origin and potential effects of craniofacial disorders on an individual's feeding, communication, and psychosocial development. Surgical procedures aimed at repairing craniofacial disorders and at improving velopharyngeal function will be discussed. The role of the speech language pathologist on the interdisciplinary team that cares for the individual with craniofacial disorders will be reviewed. This will include describing the primary responsibilities of the SLP as well as important interaction s with other team members. The role of the other team members in the management of care for the individual with craniofacial disorders will also be described. prereq: 3103

**CSD 5301. Language Disorders in Infants, Toddlers, and Preschoolers.** (2 cr. ; A-F or Audit; Every Fall)
Advanced study of language disorders in individuals birth to 6 years old. The course includes an examination of etiology, diagnosis, clinical techniques, and study of relevant research. prereq: CSD grad student or instructor consent

**CSD 5302. Language Disorders in School-Age Children.** (2 cr. ; A-F or Audit; Every Spring)
Advanced study of language disorders in individuals 6 to 21 years old. The course includes an examination of etiology, diagnosis, clinical techniques, and study of relevant research. prereq: CSD grad student or instructor consent

**CSD 5400. Rehabilitative Procedures for the Hard of Hearing.** (3 cr. ; A-F only; Every Spring)
Theories, principles, and methods regarding current approaches to aural rehabilitation of hard-of-hearing children and adults. prereq: 4400, CSD candidate or CSD grad or instructor consent

**CSD 5500. Voice Disorders.** (3 cr. ; A-F or Audit; Every Summer)
Theoretical and practical study of voice and voice disturbances in children and adults. The purpose of this course is to provide students with an introduction to the anatomical, physiological, acoustic, and theoretical aspects of voice disorders. Current diagnostic and therapeutic techniques will also be introduced. prereq: 3103, 3150 or instructor consent

**CSD 8099. Projects in Communication Disorders.** (1 cr. [max 3 cr.]; A-F only; Every Fall & Spring)
Plan B project or individual research under faculty supervision. prereq: CSD grad student or instructor consent

**CSD 8205. Advanced Fluency Disorders.** (3 cr. ; A-F or Audit; Every Fall)
Differential diagnosis, assessment, and treatment considerations for developmental stuttering and other fluency disorders. prereq: CSD grad student or instructor consent

**CSD 8210. Professional Issues in Speech-Language Pathology.** (1 cr. ; Student Option; Every Fall)
Identification and discussion of current issues and trends in the profession of speech-language pathology. Topics include professional work settings, credentialing agencies and requirements, federal and state laws influencing delivery of services, advocacy organizations, securing employment. prereq: CSD grad student or instructor consent

**CSD 8211. Professional Issues in Communication Disorders I.** (1 cr. ; A-F or Audit; Every Summer)
Identify and discuss issues in speech-language pathology related to professional organizations, certification, licensure, and professional entry. prereq: CSD Graduate student or instructor consent

**CSD 8212. Professional Issues in Communication Disorders II.** (1 cr. ; A-F or Audit; Every Fall)
Identify and discuss current professional issues in speech-language pathology practice related to politics, education and health regulations, ethics, and advocacy. prereq: 8211 or instructor consent

**CSD 8230. Neurogenic Language Disorders.** (4 cr. ; A-F or Audit; Every Fall)
Advanced study of diagnosis, treatment, and research of acquired language disorders resulting from neurological impairment: aphasia, right brain damage, dementia, and traumatic head injury. prereq: CSD Grad student or instructor consent

**CSD 8231. Neurogenic Speech Disorders.** (3 cr. ; A-F or Audit; Every Spring)
Advanced study of neuroanatomical bases for motor speech disorders; diagnostic and therapeutic procedures used in speech disorders related to central and peripheral nervous system damage. prereq: CSD grad student or instructor consent

**CSD 8232. Mgmt of Communication Disorders in Persons with Tracheostomy, Ventilator Dependency, & Laryngectomy.** (1 cr. ; A-F only; Every Summer)
Advanced study of the effects of tracheostomy tubes, ventilators and laryngectomies on the production of speech; diagnostic and therapeutic procedures used in working with individuals with trach vents, or laryngectomies. prereq: CSD grad student or instructor consent

**CSD 8235. Counseling Applications in Communication Disorders.** (2 cr. ; A-F or Audit; Every Fall)
Applications of interviewing and counseling theories and behaviors to field of speech-language pathology. prereq: CSD grad student, at least 4 cr of 8497 or instructor consent

**CSD 8297. Audiology Practicum.** (1-2 cr. [max 4 cr.]; S-N only; Every Fall & Spring)
Clinical assessment and rehabilitative experiences in an on-campus clinic under supervision of an ASHA-certified audiologist. prereq: 5400, 8400, CSD grad student or instructor consent; Cannot apply more than 2 cr to a graduate program

**CSD 8333. FTE: Master's.** (1 cr. ; No Grade Associated; Every Fall, Spring & Summer)
(no description) prereq: Master’s student, adviser and DGS consent

**CSD 8350. Applied Clinical Methods in CSD.** (1 cr. ; A-F or Audit; Every Fall)
Course addresses application of advanced clinical methods in communication disorders, with special emphasis on using evidence-based practice and cultural competence in clinical case management. Subject matter complements CSD 8397: On-Campus Graduate Internship in CSD I, prereq: grad student in CSD and instructor consent

CSD 8397. On-Campus Graduate Internship in Communication Disorders I. (1-4 cr.; A-F or Audit; Every Fall) Supervised clinical internship in on-campus clinic under supervision of an ASHA-certified speech-language pathologist. prereq: CSD grad student, instructor consent

CSD 8497. On-Campus Graduate Internship in CSD II. (1-5 cr.; A-F or Audit; Every Spring) Supervised clinical internship in on-campus clinic under supervision of an ASHA-certified speech-language pathologist. prereq: 8397, instructor consent

CSD 8597. Part-Time CSD Graduate Internship in Education Settings. (5 cr.; A-F or Audit; Every Fall) Part-time speech-language pathology internship in an education setting under an ASHA-certified speech-language pathologist with focus on expanding application of principles of clinical practice to working with children in the school system. prereq: 5260, 8497 and instructor consent

CSD 8697. Part-Time CSD Graduate Internship in Medical Setting. (5 cr.; max 10 cr.); A-F or Audit; Every Fall) Part-time speech-language pathology internship in a medical setting under an ASHA-certified speech-language pathologist with focus on expanding application of principles of clinical practice to working with patients in medical settings. Depending on placement, internship may involve working with children and/or adults. prereq: 5205, 5260, 8232, 8497 and instructor consent

CSD 8797. Full-Time CSD Graduate Externship in Education Settings. (6 cr.; A-F or Audit; Every Spring) Full-time speech-language pathology externship in an education setting under an ASHA-certified speech-language pathologist. This full-time placement allows the student to experience the rigors of full-time service delivery and actively participate in all aspects of clinical practice in education settings. Special focus is on refining social/cultural competence and formative assessment in clinical practice. prereq: 5260, 8697 and instructor consent

CSD 8897. Full-Time CSD Graduate Externship in Medical Settings. (6 cr.; A-F or Audit; Every Spring) Full-time speech-language pathology externship in a medical setting under an ASHA-certified speech-language pathologist. This full-time placement allows the student to experience the rigors of full-time service delivery and actively participate in all aspects of clinical practice in medical settings. Special focus is on refining social/cultural competence and formative assessment in clinical practice.

CSD 8997. Graduate Practicum in Communication Disorders. (1 cr. [max 2 cr.]; A-F or Audit; Every Summer) Supervised graduate clinical practicum under the supervision of an ASHA-Certified speech-language pathologist. Focus in on increasing proficiency to provide students with an opportunity to develop increased independent with clinical skills and establish a breadth and depth of knowledge in providing diagnostic and treatment services under the guidance of ASHA certified professionals. Focus is on increasing speed and efficiency of clinical performance and justifying clinical services. prereq: CSD grad student, instructor consent

CS 1094. Freshman Seminar: Computers and Society. (3 cr.; A-F or Audit; Every Fall) Explores the impact of computers on daily life. Topics include history of computing, information overload, the digital divide, privacy and security issues, piracy and copyright concerns, hacker culture, the Open Source movement, international issues, and future trends.

CS 1101. Introduction to Web Programming. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall & Spring) Introduction to the development of content for the World Wide Web. Static Web development introducing HTML and CSS. Dynamic Web development introducing the JavaScript programming language, including syntax of scripting, variables, expressions, controls structures, functions, and objects. For students with no prior programming experience, prereq: 1 year high school algebra or Math 1005 or instructor consent. Students with prior programming experience, prereq: 1 year high school algebra or Math 1005 or instructor consent

CS 1121. Introduction to Programming in Visual BASIC.NET. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall & Spring) Introduction to programming in the modern Visual BASIC language. Projects are developed in a .NET environment using the Visual Studio. Includes GUI interface development and expert-driven Windows programming. Major topics include variables, datatypes, arithmetic expressions, control structures, arrays and database file processing. For students with prior programming experience, prereq: 1 yr high school algebra or instructor consent. Experience, prereq: 1 yr high school algebra or instructor consent

CS 1301. Introduction to 3D Game Development: Learning to Program Computers by Creating Video Games. (LOGIC & QR; 4 cr.; A-F or Audit; Every Fall) Introduces skills used to solve problems with computers. Students learn fundamental computer programming skills through the development of 3D animation and 3D games.

CS 1411. Introduction to Programming in Matlab. (4 cr.; A-F or Audit; Every Fall & Spring) An introduction to programming in the Matlab language. Topics covered will include the creation of algorithms, function definition, basic programming statements, input and output, mathematical operations, matrix manipulation, and representing data. As time allows, additional coverage of plotting methods, data structures using cellular arrays and other advanced topics, prereq: one to two years of high school math or instructor consent

CS 1511. Computer Science I. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall & Spring) A comprehensive introduction to computer programming using the C++ language. The course covers program design, C++ programming basics, control structures, functions and parameter passing. Students write and implement programs with data structures (arrays), pointers and files. Object-oriented programming is also introduced, along with concepts of abstraction, ADTs, encapsulation and data hiding. prereq: 3 1/2 yrs high school math or instructor consent

CS 1521. Computer Science II. (5 cr.; A-F or Audit; Every Fall & Spring) Continuation of introduction to computer science. Methods for procedural and data abstraction. Focus on classical data structures, procedural and data abstraction, and the abstract data type. Introduction to software engineering technique. Algorithm analysis, principles of object-oriented programming issues in ethical use of computers. Requires implementation of significant programming projects. prereq: 1511 or 1581, a grade of C- or better is required in all prerequisite courses

CS 1581. Honors: Computer Science I. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall) Similar to 1511, but in greater depth and with more challenging assignments. For high-ability students. prereq: Honors student, 3 1/2 yrs high school math

CS 2121. Introduction to Programming in Java. (LOGIC & QR; 3 cr.; A-F or Audit; Every Spring) Introduction to the Java language including data types, variables, operators and expressions, control structures and arrays. Design and implementation of graphical user interface Java applets for web-based applications. prereq: 3 yrs high school math, or instructor consent

CS 2511. Software Analysis and Design. (4 cr.; Student Option; Every Fall & Spring)
Techniques for analyzing, designing, and creating medium-scale software through object-oriented design and implementation. Analysis and use of data structures. Introduction to design patterns. Emphasis on polymorphism and abstraction to increase software modularity, reusability, and flexibility. prereq: 1521 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 2521. Computer Organization and Architecture. (4 cr.; Student Option; Every Fall & Spring) Internal representation of programs and data. Computer organization and introduction to computer architecture. Machine and assembly language programming. Data and procedural structures. Addressing methods. Systems software including linking and loading. Introduction to hardware performance analysis and measurements. prereq: 1521 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 2531. Discrete Structures for Computer Science. (4 cr.; A-F or Audit; Every Fall & Spring) Introduction to mathematical foundations for computer science; sets, relations, functions, propositional logic, quantified statements, proof methods, including mathematical induction, countability. pre-req: Math 1296 or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 3011. Information Technology Hardware and Software. (4 cr.; A-F or Audit; Every Fall) Principles and application of telecommunication and computer systems hardware and software focusing on coding of data and programs, system hardware organization, and operating systems. prereq: FMIS 3201 or FMIS 2201 or LSBE 1101, 2511 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 3111. Computer Ethics. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring) Ethical issues posed by computer use, including those related to networking, intellectual property, privacy, crime and security, risk and reliability, and effects on work and wealth. Includes significant writing and a class presentation prereq: WRIT 3100 or 3110 or 3121 or 3130 or 3140 or 3150 or 3160 or Engr 4001, minimum 60 credits or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 3121. Interactive Multimedia Technology. (4 cr.; A-F or Audit; Every Fall) Fundamentals of multimedia computing and interactive technologies; digitizing and manipulating images, audio, and video materials; perception, cognition, and communication issues; software engineering, design, and analysis; web-related languages (e.g., JavaScript, HTML, CSS); media formats and compression; copyright and ethics. Includes practical labs and authoring a large-scale project. prereq: FMIS 3201 or FMIS 2201 or LSBE 1101, 2511 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 3211. Database System Concepts. (4 cr.; A-F or Audit; Every Fall) Design and use of database management systems. Emphasis on the relational data model, SQL, integrity constraints, relational database design, file structures, indexing, query processing, and optimization. Oracle-based laboratory work. prereq: FMIS 3201 or FMIS 2201 or SBE 1101, 2511 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 3221. Operating Systems Practice. (4 cr.; A-F or Audit; Every Spring) Hands-on introduction to operating systems and tools. Systems administration experience with operating systems such as Linux, Unix, or Windows. Concepts of processor management and scheduling, memory management, file systems. prereq: 2511, 3011 or instructor consent, CIS majors only, minimum 60 credits, a grade of C- or better is required in all prerequisite courses

CS 3512. Computer Science Theory. (4 cr.; A-F or Audit; Every Fall & Spring) Sets, relations, functions. Recursive definitions of functions and sets. Proof methods, including mathematical induction, diagonalization. Program correctness, asymptotic time/space complexity. Formal language theory, including regular languages and expressions, deterministic/non-deterministic finite automata, Kleene's Theorem. prereq: Math 1296 or 1596 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 3531. Automata and Formal Languages. (4 cr.; A-F or Audit; Every Fall & Spring) Introduction to the theory of computation. Deterministic and non-deterministic finite automata, regular languages and regular expressions. Kleene's Theorem. Context-free languages, context-free grammars and pushdown automata. Turning Machines and computability. pre-req: CS 2531 or MATH 3355 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 3996. Internship in Computer Science. (1-3 cr.; S-N or Audit; Every Fall, Spring & Summer) Practical, independent computer science experience in commercial, industrial, or educational setting. Department approval required before beginning internship. prereq: Computer science junior, instructor consent

CS 4411. Data Communications and Network Technology. (4 cr.; A-F or Audit; Every Spring) In-depth experience with telecommunications fundamentals, including voice-video-data transmission in LAN and Internet. Network protocol analysis and implementation. Network layered architecture and abstractions. Installation, configuration, systems integration, and management of the technologies, prereq: 2511, 3011 or instructor consent, CIS majors only, minimum 60 credits, a grade of C- or better is required in all prerequisite courses

CS 4511. Computability and Complexity. (4 cr.; A-F or Audit; Periodic Spring) Fundamentals of the mathematical theory of computation. Turing machines, Church-Turing Thesis, recursive and recursively enumerable languages, unsolvable problems, Rice’s Theorem, deterministic and non-deterministic time and space complexity, complexity classes, NP-completeness, Cook’s Theorem, P vs NP.

CS 4531. Software Engineering. (4 cr.; A-F or Audit; Every Fall & Spring) Recognition of conditions for production of high quality software. Use of current software development technology. Organization and management of software development projects. Includes a significant team project. prereq: 2511, (2531 or 3512 or MATH 3355) or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 4611. Database Management Systems. (4 cr.; A-F or Audit; Periodic Fall & Spring) Study of database management fundamentals focusing on the relational data model. Topics include database organization, file organization, query processing, concurrency control, recovery, data integrity, optimization and view implementation. prereq: 2511, 2521, (2531 or 3512 or MATH 3355) instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4821. Computer Security. (4 cr.; A-F or Audit; Periodic Fall & Spring) Entropy and the underlying characteristics of text. Encryption-basic techniques based on confusion and diffusion and modern day encryption. Access, information flow and inference control. Program threats and intrusion detection. Network and Internet security. Firewalls, trusted systems, network authentication. prereq: 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4991. Independent Study. (1-4 cr.; max 8 cr.; A-F or Audit; Every Fall & Spring) Directed study of special interest topics not available in standard curriculum. Must be arranged with instructor before registration. May include readings, research, or special projects. prereq: instructor consent

CS 4994. Honors Project. (1-2 cr.; A-F or Audit; Every Fall & Spring) Required for students who wish to participate in the computer science honors program. Students must complete a research project under supervision of a faculty adviser. prereq: Consent of computer science honors program committee

CS 4995. Special Topics: (Various Titles to be Assigned). (1-4 cr.; max 8 cr.; A-F or Audit; Periodic Fall & Spring) Study of selected topic announced in [Class Schedule].

Advanced concepts in processor and computer system organization and their impact on performance. Exploitation of parallelism, multilevel memory organization, system interconnection, and input-output organization. Prereq: 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 5631. Operating Systems. (4 cr.; A-F or Audit; Every Fall & Spring)
Operating system as resource manager. Processor management and scheduling, deadlocks, concurrency, memory management and protection and security as applied in modern operating systems. Concepts are illustrated via laboratory assignments which heavily emphasize concurrency. Prereq: 2511, 2521, 2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 5641. Compiler Design. (4 cr.; A-F or Audit; Periodic Fall & Spring)
A selection from the following topics: finite-state grammars, lexical analysis, and implementation of symbol tables. Context-free languages and parsing techniques. Syntax-directed translation. Run-time storage allocation. Intermediate languages. Code generation methods. Local and global optimization techniques. Prereq: 2511, 2521, 2531 or 3512 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 5651. Computer Networks. (4 cr.; A-F or Audit; Every Fall)
Introduction to computer networking, network programming, networking hardware and associated network protocols. Layered network architecture, network services, and implementation of computer networking software. Prereq: 2511, 2521, 2531 or 3512 or MATH 3355) or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 5761. Introduction to Natural Language Processing. (4 cr.; A-F or Audit; Periodic Fall)
Techniques for creating computer programs that analyze, generate, and understand natural human language. Topics include syntactic analysis, semantic interpretation, and discourse processing. Applications selected from speech recognition, conversational agents, machine translation, and language generation. Substantial programming project required. Prereq: CS 5111, 2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in the prerequisite course

CS 5991. Independent Study. (1-4 cr.; max 8 cr.); A-F or Audit; Periodic Fall, Spring & Summer
Directed study of special interest topics not available in the standard curriculum. Must be arranged with the instructor in advance of registration. May include readings, research, or special projects. Prereq: instructor consent

CS 5994. Advanced Topics in Computer Science. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Research-oriented study of topics of current academic or industrial interest, such as parallel algorithms, VLSI design, computational geometry, logic programming languages, program correctness, information retrieval systems, and decision support systems. Prereq: Grad student or instructor consent

CS 8323. FTE: Master’s. (1 cr.; No Grade Associated; Every Fall & Spring)
(No description) Prereq: Master’s student, adviser and DGS consent

CS 8561. Human Computer Interaction. (4 cr.; A-F only; Every Fall)
Introduction to the software algorithms, hardware components, and concepts for building and evaluating virtual environments for effective human-computer interaction (visual, auditory, haptic, and mechanical aspects). Includes the perceptual components for constructing effective human-computer interaction with a virtual environment. Prereq: 5551 or 5721

CS 8571. Principles of Embedded Computation. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Introduction to the principles of design, specification, modeling, and analysis of cyber-physical systems. Using formal models to build mathematical abstractions of complex systems. Synchronous and asynchronous models for concurrent computation. Continuous-time models for dynamical systems, and hybrid systems (including real-time systems). Formal methods for specification and verification, e.g., model checking. Prereq: graduate student

CS 8631. Advanced Systems Programming. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Overview of systems programs with emphasis on unifying themes common to major application areas, such as compiler construction, operating systems, and networks.
Advanced study of practical aspects of one of these systems, including a substantive software development project. prereq: 5631, 5641 or instructor consent

CS 8721. Advanced Computer Graphics. (4 cr. ; A-F or Audit; Periodic Fall & Spring) Contemporary computer graphics techniques. Focus on advanced graphics algorithms and programming, curve and surface representations, physically based rendering, visible surface determination, illumination, texturing, and real time rendering. prereq: 5721 or instructor consent

CS 8751. Machine Learning and Data Mining. (4 cr. ; A-F or Audit; Periodic Fall & Spring) Introduction to primary approaches to machine learning and data mining. Methods selected from decision trees, neural networks, statistical learning, genetic algorithms, support vector machines, ensemble methods, and reinforcement learning. Theoretical concepts associated with learning, such as inductive bias and Occam’s razor. prereq: CS 2511, 3512, STAT 3611 and graduate student; a grade of C- or better is required in all prerequisite courses

CS 8761. Natural Language Processing. (4 cr. ; A-F or Audit; Periodic Fall & Spring) Techniques to analyze, generate, and understand human language via computational techniques. This course focuses on empirical approaches to lexical and syntactic analysis, semantic interpretation, and discourse processing. Applications include part-of-speech tagging, parsing, lexical acquisition, and machine translation. prereq: 5761 or instructor consent; grad student

CS 8771. Advanced Computational Logic. (4 cr. ; A-F or Audit; Periodic Fall & Spring) Mathematically sound reintroduction to classical logic. Syntax, semantics, and proof theory for propositional and first-order logic. Soundness and completeness. Incompleteness. Additional topic(s) from among: automated theorem proving, second-order logic, nonmonotonic logics and knowledge representation, logic programming. prereq: 4511 or instructor consent; grad student

CS 8777. Thesis Credits: Master’s. (; 1-24 cr. [max 50 cr.]; No Grade Associated; Every Fall & Spring) (No description) prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

CS 8821. Advanced Computer Security. (4 cr. ; A-F or Audit; Periodic Fall & Spring) Broad, active, hands-on and implementation-based approach to computer security. Fundamental cryptographic theory, advanced techniques and application. Complexity, cryptanalysis, and impact of technological change. Core security theory; confidentiality, integrity, availability. Security models. Risk assessment and decision-making. Issues for general-purpose, trusted and cloud? operating system security including hardware requirements, authentication, access control, information flow and assurance. Program and network security fundamentals and best practices including coding principles, firewalls and network design. Exploits, defenses and remediation for multiple issues pertaining to software, hardware, databases and networks. Political, social and engineering issues relating to security and privacy. prereq: CS 4821 or grad student and instructor consent

CS 8893. Seminar. (1 cr. [max 3 cr.]; A-F or Audit; Every Fall & Spring) Presentation and discussion of basic ethical theories, case studies dealing with ethical issues facing the computing professional in his/her life as a practitioner, and the development of research proposal which meets the requirements and standards of the department and serves as the foundation of and guideline for the development of the graduate research project (i.e., thesis). prereq: instructor consent

Criminology (CRIM)

CRIM 1301. Introduction to Criminology. (SOC SCI; 4 cr. ; A-F or Audit; Every Fall & Spring) Analysis of social justice with emphasis on criminal justice system in United States. Nature and extent of crime; social factors related to criminal behavior. prereq: credit will not be granted if already received for SOC 1301

CRIM 2311. Criminological Theory. (4 cr. ; A-F or Audit; Every Fall & Spring) Examination of the major theories of crime causation. Specific theories include macro and micro sociological explanations, as well as biological and psychological perspectives. Discussion includes the history, social context, and policy implications of each theory. prereq: 1301

CRIM 3322. Law and Society. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Complexities, organization, and elements of legal systems, particularly in the United States. Legal theory used to explain the “working” of the law, historical development of law, current issues in law, and overall interrelationship between law and society. prereq: 30 credits or instructor consent

CRIM 3324. Sociology of Criminal Law. (3 cr. ; A-F or Audit; Every Fall) Nature, goals, and problems in administration of the American criminal judicial process. prereq: 30 credits or instructor consent

CRIM 3328. Delinquency and Juvenile Justice. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Delinquency in contemporary American society. Major issues concerning causes, prevention, and treatment of juvenile offenders. Focus on U.S. juvenile justice system. prereq: 30 credits or instructor consent

CRIM 3336. Crime and the Media. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Examines the relationship between crime, criminal justice and the media. It explores how news and entertainment media portray criminals, crime and the criminal justice system, and the effects of these portrayals on the justice system and society. prereq: 30 credits or instructor consent

CRIM 3338. Sociology of Gangs. (; 3 cr. ; A-F or Audit; Periodic Summer) Street and prison gangs in America at the national, state, and local level. Sociological research and theories relative to gang formation and the economics related to street and prison gangs. prereq: 30 credits or instructor consent

CRIM 3340. Crime Prevention. (3 cr. ; A-F or Audit; Periodic Fall & Spring) This course explores evidence-based crime prevention. Specifically, this course introduces students to what is known about crime prevention and how this information is used to inform practices that can reduce or prevent crime. Crime prevention approaches, practices, and evaluations will be examined. pre-req: minimum 30 credits

CRIM 3344. Law Enforcement and Society. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Role of police and relationship of law enforcement to the community; focuses on crime prevention. prereq: 30 credits or instructor consent

CRIM 3350. Psychopathology and Crime. (; 3 cr. ; A-F or Audit; Periodic Fall & Spring) This course introduces students to the various types of psychopathology and their relationships to crime. Students consider the concept of “abnormality,” as viewed by the public, the mental health field, and the criminal justice system. Students learn about a wide range of psychopathologies and apply this knowledge to exploring how various types of criminal activity are related to symptoms of mental disorders. prereq: Criminology or Sociology major with minimum 30 credits

CRIM 3355. Criminal Forensic Psychology. (; 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) This course introduces students to the interface of psychology and law, with a specific focus on criminal forensic psychology. The primary goal of this course is to introduce students to the roles and responsibilities of forensic psychologists in the realms of criminal and victim psychology, police and investigative psychology, legal psychology, and correctional psychology. prereq: minimum 30 credits, Crim major or instructor consent

CRIM 3361. Correctional Continuum. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Analysis of the range of sanctions and programs in corrections. Topics include both community-based and institutional corrections, as well as juvenile and adult corrections. prereq: 30 credits or higher or instructor consent

CRIM 3369. Correctional Assessment and Intervention. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Issues germane to intervention with criminal offenders. Philosophical (should we intervene?)
and pragmatic (what, if anything "works") debates are reviewed, and both punishment oriented and rehabilitative intervention programs are discussed, prereq: 30 credits or instructor consent

CRIM 3375. Restorative Justice. (3 cr.; A-F only; Periodic Fall & Spring) Examines the principles and practices of restorative justice, a community-based approach to conflict, crime, and justice. The course involves direct practice of victim-offender mediation, family group conferencing, peacemaking and sentencing circles, and other restorative approaches. Analyzes research on its effectiveness in school settings, prison, for various crimes, and for reconciliation efforts after war, genocide, and racial segregation. Includes both domestic and international examples. prereq: 60 credits or instructor consent

CRIM 3380. Death Penalty. (; 3 cr.; A-F or Audit; Periodic Fall & Spring) This course provides students with a broad survey of the death penalty as a penal sanction and the controversies and issues which surround it. Key topical areas covered are history and foundations, legal landscape, execution and death penalty processes, contemporary issues including innocence, cost, discrimination and deterrence, and perspectives and voices surrounding the death penalty, prereq: 30 credits

CRIM 3395. Special Topics: (Various Titles to be Assigned). (; 1-3 cr. [max 6 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Contemporary topics in criminology. prereq: 30 credits or instructor consent; maximum 6 credits allowed between SOC 3395 and CRIM 3395

CRIM 4305. Mentally Ill Offenders in the Criminal Justice System. (; 3 cr.; A-F or Audit; Periodic Fall & Spring) This course provides a broad survey of mentally ill offenders. Students explore the stigma and needs of this population. The course focuses on the treatment and management of mentally ill offenders, including recent innovations, at each stage of the criminal justice system. prereq: Criminology or Sociology majors with minimum 60 credits; no grad credit

CRIM 4323. Women and Justice. (3 cr.; A-F or Audit; Periodic Fall & Spring) Women's involvement in the civil and criminal justice systems, both historic and contemporary, primarily in the United States. Attention given to women as criminal and civil defendants, issues of women's civil rights, and to women practitioners within each system. Intersection of social class, gender and race/ethnicities. prereq: 1301 or SOC 1101 or CSt 1101 or Anth 1604, 60 credits, or instructor consent, no grad credit

CRIM 4340. Race, Crime and Justice. (; 3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Examines the intersection of race/ethnicity, gender, and class within the U.S. criminal justice system, with some attention given to global trends and international comparisons. Considers the racialized effects of crime control and criminal justice practices, including law enforcement, prosecution, sentencing, police-minority community relations, and the disproportionate representation of racial/ethnic groups in the prison system. Explores attitudes and perceptions of crime from the perspective of racial/ethnic minorities, and differential crime rates among majority/minority groups. prereq: 1301 or SOC 1101 or Anth 1604 or CSt 1101, 60 credits or grad student or instructor consent

CRIM 4350. Corporate and Government Crime. (3 cr.; A-F only; Periodic Fall & Spring) Examination of theories and research relating to deviant and criminal behavior within large scale formal organizations, particularly governmental and business organizations. Causes and consequences, efforts at social control, barriers to social control, prospects for change. Genocide and the emergence of international law. prereq: 60 credits or instructor consent

CRIM 4382. Victimology. (3 cr.; A-F or Audit; Periodic Fall & Spring) Extent, nature, and forms of criminal victimizations; profiles of crime victims; coping strategies; victims' rights; impact of victimizations on victims and nonvictims; victim attitudes about crime and interactions with justice system; evaluation of victim service programs. prereq: CRIM 1301 or SOC 1101, 60 credits; no grad credit

CRIM 4384. Child Abuse and Child Protection in Minnesota. (3 cr.; A-F or Audit; Every Spring) Examine how our legal system and community discovers and protects neglected or abused children. Provide understanding of juvenile court, the role of forensic science, social workers, police, teachers, nurses, physicians, and other professionals mandated to report suspected abuse. prereq: 90 credits or Grad Student or instructor consent

CRIM 4391. Independent Study in Criminology. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer) Directed reading, research, or involvement in social action leading to preparation of a paper or other product. prereq: instructor consent; maximum 6 credits allowed between SOC 4991 and CRIM 4391, no grad credit

CRIM 4399. Honors Project Criminology. (1-8 cr. [max 16 cr.]; A-F or Audit; Every Fall, Spring & Summer) Advanced individual project in any area of criminology, demonstrating sound theoretical and research foundations and resulting in a written report. prereq: 90 credits, approval by department honors program director, no grad credit, maximum 8 credits allowed between SOC 4999 and CRIM 4399

CRIM 4910. Teaching Assistantship in Criminology. (1-3 cr.; A-F or Audit; Every Fall & Spring) Practical experience in teaching-related activities in criminology courses. prereq: 60 credits, instructor consent, no grad credit, maximum 3 credits allowed between SOC 4997, SOC 4910 and CRIM 4397, CRIM 4910

CRIM 4930. Understanding Violence. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course examines violence in its many forms and provides a theoretical and conceptual foundation for understanding what it is, why it happens, and how it might be prevented or diminished. Structural, institutional and interpersonal forms of violence are examined as are theoretical perspectives focusing on the individual, socio-structural and cultural levels of explanation. prereq: Minimum 60 credits; no grad credit

CRIM 8333. FTE: Master's. (; 1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Master's student, adviser and DGS consent

CRIM 8600. Practicum in Criminology. (1-15 cr.; S-N or Audit; Every Fall, Spring & Summer) Supervised direct experience in a criminal justice agency and a concurrent seminar which focus on identification, application, and evaluation of the implementation of concepts, principles, theories and best practices in criminal justice. Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first 30 days of the preceding spring or fall semester. prereq: Grad student or instructor consent

CRIM 8777. Thesis Credits: Master's. (; 1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

CRIM 8900. Directed Readings. (1-6 cr.; A-F or Audit; Periodic Fall & Spring) Students conduct intense and detailed reading in a topic area of their choice under the guidance of a professor. prereq: Grad student or instructor consent

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Cultural Entrepreneurship (CUE)

CUE 1001. Culture Industry and Creative Economy. (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Spring) This course is an introduction to the history and contemporary scope of the culture industry, and the closely associated creative economy. Topics discussed include tourism, sports, arts and entertainment, mass media, and the food and beverage industry.

CUE 1111. Creative Problem Solving. (; 3 cr.; A-F only; Every Fall & Spring) This course provides students the change to explore and engage with contemporary and historic practice in the creative fields, principally in art and design through a series of personal and creative activities. The course promotes the exploration of new media as...
CUE 3001. Foundations of Cultural Entrepreneurship I. (3 cr.; A-F or Audit; Every Fall)
This first of the two entrepreneurship courses creates an entrepreneurial experience with all of the pressures and demands of an early stage creative startup. The class is designed to give students the experience of how to search for business models in the culture and creative industries. Students will use design and discovery thinking, combined with ideation and customer discovery to develop a business model and also a feasibility plan for the delivery of a cultural product or service. The business model can be for a for-profit enterprise or a non-profit organization, but in either case the same feasibility criteria would apply, i.e. the solution should generate financial returns and create cultural value through the preservation and/or revitalization of culture.
prereq: minimum 60 credits

CUE 3002. Foundations of Cultural Entrepreneurship II. (3 cr.; A-F or Audit; Every Spring)
This second entrepreneurship course creates an entrepreneurial experience for students with typical pressures and demands of an early stage startup. The course is about Living the Entrepreneurial Experience. It is about being in action while advancing the cultural enterprise idea from feasibility study to testing the minimum viable product. Key elements of the process involve ongoing research, conducting rapid test cycles, while engaging prospective customers, experts, stakeholders, suppliers, business partners, collaborators, and financiers. Students will develop plans to test assumptions, execute the plans and make decisions pertaining to products and services. The semester ends with a minimum viable product or service. Through action and reflection students will develop the competency to think and act entrepreneurially in order to advance the development of their cultural enterprises.
prereq: CUE 3001 or MGT 4422 or instructor consent

CUE 3101. Introduction to Design Thinking and Conceptual Competencies. (3 cr.; A-F or Audit; Every Fall & Spring)
This course introduces students to each step of the design thinking process and design thinker’s toolkit. Design thinking is an iterative problem solving process of discovery, ideation, and experimentation that employs design-based techniques to gain insight and yield innovative solutions for virtually any type of organizational or business challenge. Students will know the six conceptual competencies important for creatively solving complex real-world challenges. Students will develop skills as ethnographers, visual thinkers, strategists, and storytellers through a hybrid of seminar discussions and collaborative projects. Students will directly apply what they have learned to cases in order to untangle the complexities of markets, organizations, communities, policies and to create real impact.
pre-req: minimum 30 credits or instructor consent

CUE 4001. Entrepreneurial Finance for Creative Industries. (3 cr.; A-F or Audit; Every Fall)
This course focuses on the financing issues facing new business ventures in the culture industry/creative economy and examines financing from the perspective of both the entrepreneur and the employee in these ventures. Students will learn how to analyze financial statements, create financial forecast for the creative industry, and evaluate new creative ventures. They will study the tools and methods used in determining how much money a venture needs in order to be viable and explore tools and approaches used when selling an idea to potential investors. Attention will be devoted to the different types of financing alternatives available to new, young, and small ventures. The venture capital market will be investigated in detail, including self-financing, debt financing, angel financing, and financing from venture capital firms. Students will explore issues involved in negotiating deals and in formulating deal structures and encouraged to understand financing issues and options from the vantage points of the entrepreneur, the lender, and the investor.
prereq: CUE 3002, no grad credit

CUE 4002. Managing Cultural Organizations. (3 cr.; A-F or Audit; Every Spring)
This course provides students with the knowledge and skills needed to play a leadership role in a cultural organization. Using case methodology students will know theories, methods, and practices for managing cultural organizations, gain the skills to participate strategically in the governance of such organizations and be able to design and assess the effectiveness of governance models, volunteer programs, organizational capacity, and inter-organizational relationships. Students will also know the legal requirements affecting cultural organizations and approaches to finance the programming and operations.
prereq: minimum 60 credits or instructor consent, no grad credit

CUE 4003. Entrepreneurial Ethics and Values. (3 cr.; A-F or Audit; Every Spring)
This course offers an undergraduate introduction to organizational integrity and responsibility and related legal and social issues. Students will acquire an integrated and normatively substantive foundation in business ethics that distinguishes ethical justification from regulation by law and market forces. They will also develop skill for discerning the intrinsic ethical vocation for organizational leadership, develop an awareness of the effects of managerial decision making on the moral rights and interest of oneself and others. Additional, learn to appreciate the normative dimensions of managerial decision making in the context of a complete way of life, including family life, religious traditions, civic responsibilities, global integration and boarder issues of social justice. Students will also become proficient in systematically articulating ethical arguments to justify organizational policies and practices; and to grow in personal commitment to building the organizational cultures that promote and reinforce ethical conduct.
prereq: CUE 3001, no grad credit

CUE 4091. Independent Study. (1-4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
Students devise programs of reading and research in consultation with instructor to expand upon a topic related to one studied in regular coursework. Strong focus on academic writing and research. An agreement that specifies nature of the project, amount of work, and number of credits must be approved by a faculty adviser. pre-req: instructor consent

CUE 4096. Field Study. (2 cr. [max 4 cr.]; A-F only; Every Summer)
Students taking this course will be placed in an entrepreneurial project, following consultation with the Cultural Entrepreneurship faculty. Students complete a minimum of 80 hours of project-based work at a selected non-profit, business or governmental institution. A project charter stating the objective, scope, deliverable, timeline and communication protocol is established before the start of the course. Establishing and evaluation of student learning objectives are critical component of the course. To receive the credit for the course, students must complete the project deliverable with a sign-off from the appropriate stakeholder in the sponsoring organization and receive a favorable evaluation by their instructor. prereq: instructor consent, no grad credit

CUE 4097. Internship. (2 cr. [max 4 cr.]; A-F or Audit; Every Summer)
Students taking this course have been placed in an entrepreneurial internship, following consultation with the CUE director. Students complete a minimum of 80 hours of work at a selected internship site, observing and participating in the everyday operations of a non-profit or for-profit venture. To receive credit for the internship, students must complete a final report of their activities, and receive a favorable evaluation by their internship supervisor. prereq: 1001, 3001, instructor consent; no grad credit

CUE 5002. Managing Cultural Organizations. (3 cr.; A-F only; Periodic Fall & Spring)
This course provides students with the knowledge and skills needed to play a leadership role in a cultural organization. Using case methodology students will know theories, methods, and practices for managing cultural organizations, gain the skills to
Cultural Studies (CST)

CST 3050. Utopian and Dystopian Images. (3 cr.; A-F or Audit; Periodic Fall & Spring) How images and narratives of utopia engage with social problems, including divisions of labor and wealth, gender, race, environmental degradation, crime, violence, war, and human interfaces with technology. Emphasis is on film, fiction, and other cultural representations of utopia and dystopia. Course concepts explore human visions of equality, perfection, power, and freedom. prereq: Minimum 30 credits

CST 3095. Special Topics: (Various Titles to be Assigned). (; 4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall & Spring) Special Topics courses will be offered in order to increase possible course offerings in the Cultural Studies minor and give students the opportunity to work with a wide range of interdisciplinary faculty and topics. prereq: minimum 30 credits

CST 4653. Cultural Studies Senior Seminar/ Capstone. (4 cr.; A-F or Audit; Every Spring) As the capstone for the cultural studies minor, this course asks students to engage with current work produced in the field of cultural studies, including (but not limited to) texts, documentary videos, and experimental films produced for both popular and academic audiences. prereq: 1101, CST minor, no grad credit

CST 4691. Independent Study in Cultural Studies. (1-4 cr. [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed reading, research, or involvement in an issue leading to the preparation of a paper or other product. prereq; instructor consent

Dance (DN)

DN 1001. Introduction to the World of Dance. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall) Appreciation of dance as an art and entertainment form using aesthetic, sociocultural, historical, and genre studies. Video and concert viewing, readings on choreographers and dancers, critiques, and lab experiences.

DN 1101. Tap Dance Fundamentals. (; 2 cr. [max 4 cr.]; A-F or Audit; Periodic Spring) Fundamental tap dance technique, emphasizing tap dance as a social and performing art form.

DN 1101. Modern Dance Technique I. (FINE ARTS; 2 cr. [max 12 cr.]; A-F or Audit; Every Fall) Beginning work, emphasizing modern dance as a performing art form.

DN 1110. Jazz Dance Fundamentals. (FINE ARTS; 2 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring) Beginning work, designed for the student with very minimal or no previous dance experience. Emphasis on introducing basic movement concepts (i.e., placement, musicality) and jazz dance styles.

DN 1111. Jazz Dance Technique I. (FINE ARTS; 2 cr. [max 8 cr.]; A-F or Audit; Every Fall & Spring) Beginning work, emphasizing jazz dance as a performing art form.

DN 1121. Tap Dance Technique I. (2 cr. [max 8 cr.]; A-F or Audit; Every Fall) Beginning work, emphasizing tap dance as a performing art form, prereq: 4 credits of 1101 or 1111, instructor consent

DN 1131. Ballet Technique I. (FINE ARTS; 2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) Beginning work, emphasizing ballet as a performing art form.

DN 2101. Physical Conditioning for Dance. (; 1 cr. [max 3 cr.]; A-F or Audit; Periodic Spring) Introductory course in physical conditioning specifically aimed at cross training for dancers. Course will include basic anatomy, strengthening, stretching including static and dynamic, and addressing and eliminating muscular imbalances that inhibit proper technique. prereq: Completion of one 1xxx Dance course or instructor consent

DN 2111. Jazz Dance Techniques II. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) Advanced Beginning/Low Intermediate work, emphasizing jazz dance as a performing art form with increased emphasis on the progression of technical skills. prereq: Successful completion of DN 1101 with grade of B or better or by placement evaluation of instructor; instructor consent

DN 2131. Ballet Technique II. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) Advanced Beginning/Low Intermediate work, emphasizing ballet as a performing art form with increased emphasis on the progression of technical skills. prereq: Successful completion of DN 1131 with grade of B or better or by placement evaluation of instructor; instructor consent

DN 3201. Modern Dance Technique II. (2 cr. [max 12 cr.]; A-F or Audit; Every Spring) Intermediate work, emphasizing modern dance as a performing art form, prereq: instructor consent

DN 3211. Jazz Dance Technique III. (2 cr. [max 18 cr.]; A-F or Audit; Every Spring) Intermediate work in lyrical and percussive jazz dance techniques. prereq: instructor consent

DN 3221. Tap Dance Technique II. (2 cr. [max 8 cr.]; A-F or Audit; Every Spring) Intermediate work, emphasizing tap dance as a performing art form. Tap dance composition and development of improvisational skills. prereq: 1121 or instructor consent

DN 3321. Ballet Technique III. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall) Intermediate work, emphasizing ballet as a performing art form. prereq: instructor consent

DN 3341. Social Dance for the Stage. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall) An introduction to, and instruction in, social dance forms commonly used in theatrical staging and musical theatre choreography, including historical and cultural context. prereq: minimum 60 credits, BFA Theatre major, instructor consent

DN 3401. Dance Composition. (3 cr.; A-F or Audit; Periodic Spring) Study and development of dance choreography through creative experiences. prereq: instructor consent

DN 3611. Dance History. (3 cr.; A-F or Audit; Periodic Spring) Religious, social, political, and artistic forces that have contributed to development of dance in Western civilization, emphasizing Romantic era through present. prereq: 1001 or instructor consent

DN 3991. Independent Study in Dance. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Directed readings and projects arranged between student and faculty mentor. prereq: instructor consent; undergraduates may not take more than 6 credits in 3991 and 5991 combined

DN 3995. Special Topics (Various Titles to be Assigned). (; 1-9 cr. [max Audit; Periodic Fall, Spring & Summer] Special topics to be assigned.

DN 4116. Musical Theatre Audition Techniques. (3 cr.; A-F or Audit; Periodic Spring) Advanced dance, song, acting, and marketing capstone course for professionally oriented musical theatre student. prereq: instructor consent, no grad credit

DN 4311. Jazz Dance Technique IV. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall) Advanced work, emphasizing jazz dance as a performing art form. prereq: instructor consent; no grad credit

DN 4331. Ballet Technique IV. (2 cr. [max 12 cr.]; A-F or Audit; Every Spring) Advanced work, emphasizing ballet as a performing art form. prereq: 3231, instructor consent; no grad credit

DN 4901. Intern Teaching Dance. (2 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Practical experience teaching introductory level dance classes. Students serve as intern teachers assisting instructor in administration of course. prereq: 3201 or 3211 or 3221 or 3231, instructor consent; no grad credit

DN 5991. Independent Study in Dance. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)
Advanced directed readings and projects arranged between student and faculty mentor. prereq: instructor consent; undergrads max 6 cr in 3991 and 5991 combined.

DN 5997. Internship in Professional Dance. (1-12 cr.; A-F or Audit; Every Fall & Spring) Internship with a cooperating professional, commercial, or regional dance company. prereq: department approval; 1 cr for each 45 hrs of work

Early Childhood Studies (ECH)

ECH 100. Foundational Issues in Early Childhood Studies. (; 3 cr.; A-F or Audit; Every Fall) Historical and cultural perspectives of Early Childhood Studies. Theoretical models for the education of young children from birth through age eight will be addressed through professional exploration. Methods for facilitating child development as well as strategies for collaborating with families and communities will be discussed. Practicum experience with young children will provide a hands-on experience for the students.

ECH 1015. Literature for Young Children. (; 3 cr.; A-F or Audit; Every Fall) Introduces professionals who work with children from birth through age eight to literature for young children. Criteria for selecting book and non-book materials will be presented, discussed and utilized when examining, selecting, and reading such materials. Strategies for sharing the books and non-book materials with children and for integrating the materials into day care, preschool, and primary settings will be explored.

ECH 2025. Educating the Human Brain. (SOC SCI; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Issues related to early brain development and the biological underpinnings of early emotional and cognitive development. A biological view of attachment and social vulnerability.

ECH 3000. Children in Health Care Settings. (; 3 cr.; A-F or Audit; Periodic Fall & Summer) An online course for students interested in learning more about the profession of Child Life and aspects of pediatric healthcare. Pursuit of Child Life concentration is not required. Topics covered include Child Life theoretical foundations, assessment, preparation, play, coping, the therapeutic relationship, family centered care, documentation, grief and loss, and the role of Child Life within the interdisciplinary medical team. Attention is given to understanding children and teens in the context of their development as it relates to interventions in the medical settings.

ECH 3021. Teaching Mathematics: Birth-Age Eight. (; 4 cr.; A-F or Audit; Every Spring) Development and instruction in play-based and problem-based mathematics in birth to age 8 settings. Methods, materials, and research findings related to teaching of mathematics. Practicum required, prereq: Admitted to UECH program

ECH 3022. Literacy for Young Children: Teaching Reading, Writing, Speaking, and Listening. (; 4 cr.; A-F or Audit; Every Spring) Prepares professionals who work with children from birth to age eight to introduce and teach developmentally appropriate skills and strategies related to reading, writing, speaking, and listening. Course assignments will be linked to practicum experiences. Practicum required. prereq: Admitted to UECH program

ECH 3030. Inquiry, Social Studies, and Science Learning: Birth-Age Eight. (5 cr.; Student Option; Every Spring) Exploratory and socially sensitive environments for children from birth through age 8; inquiry, physical knowledge, social processes in children’s play; planning, implementing, evaluating culturally and developmentally appropriate science and social studies learning experiences; integrated, thematic curricula and use of technology to enhance learning. Practicum required, prereq: admitted to UECH program; must be taken either after or concurrently with SpEd 3105

ECH 3050. Observing Early Relationships in Infants and Toddlers. (; 4 cr.; Student Option; Every Spring) Observing, recording, and guiding behaviors in children from birth through age eight. Focuses on informal methods for observation. Practicum is required. Use of technology for behavioral observation. prereq: Minimum 30 credits

ECH 3055. Creative Expressions and Emergent Literacy: Birth - Age 8. (; 4 cr.; A-F or Audit; Every Spring) Exploration of developmentally appropriate methods and materials for the integration of art, music and movement experiences ages birth-age 8. An emphasis on using the arts to support development of concept of print, the alphabet, vocabulary, phonemic awareness, comprehension, motivation, and other literacy skills. This course will involve some field work. prereq: Admission to the UECh program

ECH 3060. Teaching Culturally and Linguistically Diverse Children. (; 3 cr.; A-F or Audit; Every Spring) Provides Unified Early Childhood Education students with knowledge and skills to teach a variety of young diverse learners. The different groups the course will target include children learning English as a second language, urban, rural, gifted, and talented learners. prereq: admitted to UECH program

ECH 3100. Family Partnerships. (; 1 cr.; A-F or Audit; Every Spring) Practicum experience in which students partner with a young child and their family. Through this experience, students practice advocacy skills, integrate theory in early childhood, and observe children in the context of the family. prereq: Admission to the UECh program

ECH 4000. Leadership in Early Childhood Studies. (; 3 cr.; A-F or Audit; Every Spring) Develops knowledge and competencies in the area of educational leadership, including development and administration of early childhood programs, professionalism, ethics and social policy. prereq: Admission to UECH program; no grad credit

ECH 4010. Infant and Early Childhood Perceptual and Psychomotor Development. (2 cr.; A-F or Audit; Every Fall) Issues related to typical and atypical perceptual and psychomotor development in children from birth to age eight will be examined. The interaction of the mover with the contextual features of the environment and the demands of the movement task will provide an opportunity to explore developmentally appropriate methods and materials for the integration of physical activities and movement for children's overall growth. prereq: Admitted to UECH program, no grad credit

ECH 4400. Professional Development Seminar. (; 1 cr. [max 3 cr.]; A-F or Audit; Every Spring) Professional development through documentation, reflection, synthesis of learning as related to standards. Development of processes and product portfolios. Presentation of and dialogue about emergent learning, prereq: admitted to UECH program; no grad credit

ECH 4600. Student Teaching in Early Childhood/Primary. (3-12 cr.; 24 cr.; S-N only; Every Fall & Spring) Application of skills, understanding, and knowledge related to working with children from birth through age eight. prereq: Admitted to UECH program or post bac per instructor consent; no grad credit

ECH 4610. Professional Issues Seminar in Early Childhood Education. (; 3 cr.; A-F only; Every Fall & Spring) Reflections on current issues and ethical dilemmas in field of early childhood education, birth through age eight; preparation for professional job-seeking and interviewing. prereq: admitted to UECH program; no grad credit

ECH 4991. Independent Study. (3-6 cr.; A-F or Audit; Every Fall & Spring) Individualized reading and research in a special topic. prereq: instructor consent; no grad credit

Economics (ECON)

ECON 1003. Economics and Society. (SOC SCI; 3 cr.; A-F or Audit; Every Spring) General description of U.S. economy and analysis of contemporary economic problems. Introduction to major economic issues and problems of the day, providing a simple framework used by economists for analysis. prereq: Cannot apply credit to economics major or minor or BAc or BBA majors

ECON 1022. Principles of Economics: Macro. (SOC SCI; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Analyzing overall performance of an economic system. National income accounting and theory, unemployment, inflation, fiscal policy, money, monetary policy, economic growth, international trade, non-U.S. economies, and real-world application of these concepts. prereq: Minimum 15 credits or department consent
ECON 1023. Principles of Economics: Micro. (SOC SCI; 3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Analyzing free enterprise system through study of product and resource markets. Supply and demand, utility, production and cost, market structure, resource use, market failures, regulatory role of government, and real-world application of these concepts. prereq: Minimum 15 credits or department consent

ECON 2030. Applied Statistics for Business and Economics. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Introduction to modern business statistics, emphasizing problem solving applications through statistical decision making using case studies. Topics include organization and presentation of data, summary statistics, distributions, statistical inference including estimation, and hypothesis testing, prereq: minimum 30 credits, LSBE student, pre-business or pre-accounting or Econ BA major or Graphic Design and Marketing major or Graphic Design with Marketing subplan major or Econ minor or Accounting minor or Business Admin minor; credit will not be granted if already received for Econ 2020, Stat 1411, Stat 2411, Stat 3611, Soc 3151, Psy 3020

ECON 3020. Applied Statistics for Business and Economics II. (3 cr.; A-F or Audit; Every Fall & Spring)
A second introductory statistics course including more advanced topics. Topics include hypothesis testing, analysis of variance, and introduction to correlation and regression. prereq: LSBE Candidate and one of the following courses: ECON 2030, POL 2700, PSY 3020, SOC 3155, STAT 1411, STAT 2411, STAT 3411 or STAT 3611.

ECON 3022. Intermediate Macroeconomics. (3 cr.; A-F or Audit; Every Fall)
Determinants of national income, employment, and price levels with particular attention to aggregate demand and aggregate supply, and monetary and fiscal policy, prereq: 1022, 1023, Math 1160 or Math 1296, Econ major or minor or LSBE candidate

ECON 3023. Intermediate Microeconomics. (3 cr.; A-F or Audit; Every Spring)
Behavior of households as consuming units and suppliers of resources; analysis of decision making by firms under various market conditions. prereq: 1022, 1023, Math 1160 or Math 1296, Econ major or minor or LSBE candidate

ECON 3030. Econometrics I. (3 cr.; A-F or Audit; Every Fall)
Techniques used in analyzing economic and business data; emphasis on computer methods and research applications. Analysis of variance, qualitative data analysis, modeling, regression, residual and influence analysis, time series. prereq: 1022, 1023, (2030 or Stat 1411 or Stat 2411 or Stat 3611), Math 1160 or Math 1296, Econ major or minor or LSBE candidate

ECON 3031. History of Economic Thought. (3 cr.; A-F or Audit; Every Fall & Summer)
Development of economic ideas, principles, and systems of analysis from early times to present, emphasizing personalities and historical events surrounding development of economic thought. prereq: 1003 or 1022, 1023

ECON 3150. Development Economics. (3 cr.; A-F or Audit; Every Spring)
Overview of the conceptual meaning of economic growth and development, problems facing developing countries, economic models underlying different development paths. Exploration of socio-historical and economic reasons for lack of development in selected areas and policy options to promote economic progress. prereq: 1022, 1023

ECON 3311. Money and Banking. (3 cr.; A-F or Audit; Every Fall & Spring)
Role of financial institutions and markets, emphasis on Federal Reserve System and its control of commercial banking system, monetary theory and policy, and international economics. prereq: 1022, Econ major or minor or LSBE candidate

ECON 3314. Sports Economics. (3 cr.; A-F or Audit; Every Fall)
This course will introduce and apply microeconomic concepts to issues that arise or pertain to the business and practice of sports. The relevant areas of microeconomics include industrial organization, antitrust, game theory, labor, public finance and urban economics. When and where possible, current real world applications of economics in the sporting world will be discussed. prereq: 1022, 1023, Econ major or minor or LSBE candidate

ECON 3402. Global Economic Issues. (3 cr.; A-F or Audit; Every Fall)
Application of economic theory of markets to analyze major issues shaping the future of the world economy. Emphasizes globalization of markets and the institutions involved in coordinating economic policies among world economies prereq: LSBE candidate or Econ major or Econ minor

ECON 3402. Global Economic Issues. (3 cr.; A-F or Audit; Every Spring)
Application of economic theory of markets to analyze major issues shaping the future of the world economy. Emphasizes globalization of markets and the institutions involved in coordinating economic policies among world economies prereq: LSBE candidate or Econ major or Econ minor

ECON 3721. Natural Resource and Energy Economics. (3 cr.; A-F or Audit; Spring Even Year)
Microeconomic analysis of natural resource and energy markets. Role of these resources in production processes and waste generation, use and pricing of nonrenewable and renewable resources over time, resource availability, sustainable development, and ecological economics. prereq: 1023, preferred but not required: 3023; credit will not be granted if already received for ECON 4721

ECON 3777. Environmental Economics. (3 cr.; A-F or Audit; Spring Odd Year)
Microeconomic analysis of environmental quality as an economic good. Pollution control, benefit-cost analysis, valuation methodologies and their application to air and water quality, hazardous waste management, preservation, and global pollutants. prereq: 1023, preferred but not required: 3023; credit will not be granted if already received for ECON 4777

ECON 3821. Labor Economics: Theory and Issues. (3 cr.; A-F or Audit; Every Fall)
Labor markets from theoretical and institutional perspectives, including wage theories, labor supply, labor demand and employment, human capital investments, and occupational choice. prereq: 1023, preferred but not required 3023, Econ major or minor or LSBE cand

ECON 3910. Economics of Health Care. (3 cr.; A-F or Audit; Every Fall & Spring)
Explores the health care sector and health policy issues from an economic perspective. Topics to be examined include the demand for health and medical care services, health insurance markets, federal health insurance programs, and the pharmaceutical industry. prereq: 1022, 1023, Economics major or minor or Health Care Management minor or LSBE cand

ECON 4040. Econometrics II. (3 cr.; A-F or Audit; Spring Even Year)
Development and application of tools of economic research and analysis; emphasis on critical thinking using computer-based statistical methods. Econometrics (theory and practice), applied research techniques, economic forecasting, and time series analysis. Research report. prereq: 3030 or Stat 5511 or MKTG 3761

ECON 4213. Mathematical Economics. (3 cr.; A-F or Audit; Fall Even Year)
Application of fundamentals of differential and integral calculus and linear algebra to static, comparative static, and dynamic topics in microeconomics and macroeconomics. prereq: 1022, 1023, Math 1160 or Math 1296

ECON 4315. Monetary Theory and Policy. (3 cr.; A-F or Audit; Spring Odd Year)
Development of monetary theory and implications of theory for Federal Reserve System's control of money supply and financial institutions, money market strategy, and monetary policy, including goals, targets, and indicators. prereq: 3022

ECON 4397. Economics Internship. (1-6 cr.; max 18 cr.); A-F only; Every Fall, Spring & Summer
Work-integrated learning program providing practical experiences within students? major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course; 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three credits, four credits will be allowed. ([credit hours of internship in the major curriculum,? students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prereq: LSBE Candidate, prior major coursework, consent of Internship Director; no grad credit

ECON 4410. International Economics. (3 cr.; A-F or Audit; Spring Even Year)
Classical and modern theory of international trade. Extension, empirical verification, and applications of modern theory. Alternative theories of international trade. Concept
and measurement of balance of payments.
Methods of balance of payments adjustments.
Alternative international monetary systems.
Selected current issues. prereq: 1022, 1023,
3022 or 3023, no grad credit
ECON 4512. Firm Decision and Strategy. (3 cr. ; A-F or Audit; Spring Odd Year)
Applied microeconomics combining topics that focus on decision-making faced primarily by
private institutions from the Managerial and
Industrial Organization fields. Topics include
demand for products, production and costs,
pricing and output decision, and antitrust law.
prereq: 3023, 3030 or STAT 5511; no grad
credit
ECON 4570. Public Finance. (3 cr. ; A-F or Audit; Spring Even Year)
Theory and practice of determining
governmental expenditures and revenues,
including consideration of public goods, welfare
economics, raising of revenues, debt policy,
and economic stabilization. prereq: 1022, 1023
ECON 4590. Times Series Forecasting and
Macroeconomic Policy. (3 cr. ; A-F or Audit; Fall Odd Year)
The course seeks to provide students with
the statistical and software tools required
to conduct economic forecasting applied to
macroeconomic policy. Topics include time
series analysis, Box-Jenkins and ARIMA
processes, Exponential Smoothing, Estimation
and Forecasting, Forecast Evaluation.
Nonlinear Time Series, Time Series Topics.
Forecasts will be applied and analyzed within
the context of current macroeconomic policy.
Use of econometric software is expected. pre-
req: 3022 and (ECON 3030 or STAT 5511)
ECON 4613. Oligopoly and Monopoly. (3 cr. ; A-F or Audit; Spring Even Year)
Alternatives open to a free-enterprise
economy when economic goals have not been
satisfactorily achieved by the private sector.
Public regulation and antitrust legislation and
enforcement examined as a means of social
control when unacceptable market failures exist.
prereq: 1023, 3023
ECON 4991. Independent Study. (1-6 cr. ; A-F or Audit; Every Fall, Spring & Summer)
For students wishing to do special work in
areas useful to individual programs and
objectives and not available in regular course
offerings. prereq: Economics major, 12 credits
of Econ 3xxx or above, instructor consent
ECON 5040. Econometrics II. (3 cr. ; A-F or Audit; Spring Even Year)
Development and application of tools of
economic research and analysis; emphasis
on critical thinking using computer-based
statistical methods. Econometrics (theory
and practice), applied research techniques,
economic forecasting, and time series analysis.
Research report. pre-req: MBA student or
department consent
ECON 5213. Mathematical Economics. (3 cr. ; A-F or Audit; Fall Even Year)
Application of fundamentals of differential
and integral calculus and linear algebra to static,
comparative static, and dynamic topics in
microeconomics and macroeconomics. pre-req:
MBA student or department consent
ECON 5410. International Economics. (3 cr. ; A-F or Audit; Spring Even Year)
Classical and modern theory of international
trade. Extension, empirical verification, and
applications of modern theory. Alternative
theories of international trade. Concept
and measurement of balance of payments.
Methods of balance of payments adjustments.
Alternative international monetary systems.
Selected current issues. pre-req: MBA student
or department consent
ECON 5590. Times Series Forecasting and
Macroeconomic Policy. (3 cr. ; A-F or Audit; Fall Odd Year)
The course seeks to provide students with
the statistical and software tools required
to conduct economic forecasting applied to
macroeconomic policy. Topics include time
series analysis, Box-Jenkins and ARIMA
processes, Exponential Smoothing, Estimation
and Forecasting, Forecast Evaluation.
Nonlinear Time Series, Time Series Topics.
Forecasts will be applied and analyzed within
the context of current macroeconomic policy.
Use of econometric software is expected. pre-
req: MBA student or department consent
ECON 5613. Oligopoly and Monopoly. (3 cr. ; A-F or Audit; Spring Even Year)
Alternatives open to a free-enterprise
economy when economic goals have not been
satisfactorily achieved by the private sector.
Public regulation and antitrust legislation and
enforcement examined as a means of social
control when unacceptable market failures exist.
pre-req: MBA student or department consent

Education (EDUC)
EDUC 1000. Human Development. (3 cr. ; A-F or Audit; Every Fall & Spring)
Patterns and theories of development from
conception through late adulthood emphasizing
early childhood through adolescence; analysis
of individual, family, and environmental factors
which affect development over the life span.
EDUC 1100. Human Diversity. (CDIVERSITY; 3 cr. ; A-F or Audit; Every Fall &
Spring)
Cultural, physical, socially constructed,
and psychological differences in people. Social,
political, and economic implications of human
diversity in modern society. Practicum in
community agency.
EDUC 1101. Education in Modern Society. (HUMANITIES; 3 cr. ; A-F or Audit; Every Fall &
Spring & Summer)
Survey of educational institutions and practices
used in different sectors of society. Historical
and philosophical foundations of American
education.
EDUC 1103. Introduction to Africa. (GLOBAL PER; 3 cr. ; A-F or Audit; Every Fall &
Summer)
Examination of the histories, cultures, and
peoples of Africa. Pre-colonization Africa
societies. Colonial and postcolonial contacts
with Europe. Brief survey of major social,
cultural, economic, and political institutions
of Africa and their roles in socioeconomic
and political development. Issues facing
contemporary African societies. Programs
and policies to address Africa’s problems.
Africa and the world. Positioning Africa and its
peoples in world affairs.
EDUC 1201. Managing Planet Earth. (SUSTAIN; 3 cr. ; A-F or Audit; Every Fall,
Spring & Summer)
Environmental education; exploration of key
concepts and principles that govern how nature
works; potential solutions to environmental
and resource problems.
EDUC 1302. Topics in Academic Reading I. (3 cr. ; max 6 cr. ; A-F or Audit; Every Fall)
Topics in Academic Reading I focuses on
critical reading in a particular field, building an
academic context for language development.
Students read, take notes, study terminology,
develop ideas, and organize, extend, and
articulate opinions about the readings through
writing and discussion. Course activities will
center around reading authentic college texts
in an academic area (ex. the social sciences).
This is intended to be a learning-community
paired course. prereq: This course was
previously offered as LANG 1302; instructor
consent; maximum of 4 credits between EDUC
1302 and LANG 1302
EDUC 2000. Technology for Teaching and
Learning. (3 cr. ; A-F or Audit; Every Fall &
Spring)
Using technology tools to enhance student
learning in kindergarten through grade 6,
including interactive whiteboards, tablet
computers, other technology tools. Creating,
teaching and assessing lessons; differentiating
instruction with technology. prereq: minimum
12 credits
EDUC 2301. English for Academic Writing. (3 cr. ; max 6 cr. ; A-F or Audit; Every Fall)
Academic writing for students who are not
native speakers of English. Build fluency,
comfort with summarizing, quoting, using
sources to develop an organized essay;
practice drafting and revising; sentence-level
editing. prereq: This course was previously
offered as LANG 2301; instructor consent;
maximum of 6 credits between EDUC 2301
and LANG 2301
EDUC 2302. Topics in Academic Reading II. (3 cr. ; max 6 cr. ; A-F or Audit; Every Spring)
Topics in Academic Reading II focuses on
critical reading in a particular field, building an
academic context for language development.
Students read, take notes, study terminology,
develop ideas, and organize, extend, and
articulate opinions about the readings through
writing and discussion. Course activities will
center around reading authentic college texts
in an academic area (ex. the social sciences).
For students whom English is not the first
language. prereq: This course was previously
listed as LANG 2302; maximum of 6 credits
between EDUC 2302 and LANG 2302
EDUC 2303. Academic Interactions: Listening and Speaking in the College
EDUC 2304. Editing for Writers. (4 cr.; A-F or Audit; Every Fall & Spring) This course prepares teacher candidates with the necessary information, resources, and skill to become teachers of world languages in K-12. Content focus will include various teaching methods and approaches, fundamentals of language learning, and program components such as assessment, proficiency, and language standards. Students will develop their skills in planning and implementing language programs through lesson and unit planning, and micro-teaching experience. Prerequisites: FR 2301 or GER 2301 or SPAN 2301 or equivalent. Admissions to EdSe program or instructor consent; grad credit; credit will not be granted if already received for LANG 4044.

EDUC 4081. American Indian Education Policy Development in the 20th Century. (CDIVERSITY; 3 cr.; A-F; Audit; Every Fall & Spring) Focus on the development of educational policies for American Indian people through the 20th Century; examines shifts in educational policy the impact of such policy and how American Indians reacted to the nature of education programs and sought to reform schools to better meet tribal and community needs. Features of American Indian education policy development, relationship and role of research and science, public perceptions of American Indians, Indian activism, and tribal and community involvement in educational policy will be discussed and analyzed. A number of policy themes will be explored, language and culture, self-determination and control, expansion of education opportunities and the well being of American Indian children and youth through the statutory and programmatic iterations of these themes. The focus will be on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. Prerequisites: Minimum 60 credits, no grad credit; credit will not be granted if already received for EDUC 5081.

EDUC 4110. Advanced Earth Science for Teachers. (2 cr.; A-F or Audit; Every Spring) Investigative approach to secondary school teaching of modern earth science curricula, including aspects of astronomy, meteorology, oceanography, and geology, the latter with an emphasis on plate tectonics. (2 hrs lecture) Prerequisite: AST 1040, EDSE 3204, GEOL 1110, 2110 or 2120 or 3210; teaching science majors or grad student or instructor consent; no grad credit; credit will not be granted if already received for GEOL 4110.

EDUC 4226. Geometry for Teachers in Grades 5-8. (3 cr.; A-F; Audit; Every Spring) The development of geometry concepts through investigations of geometric relationships and informal properties provides the basis for examining the teaching and learning of geometry in grades 5-8. Prerequisite: Math 1140 or 1296.

EDUC 4227. Number Theory for Teachers in Grades 5-8. (3 cr.; A-F or Audit; Every Fall) The development of number concepts and theories through investigations and applications of discrete mathematics strategies provides the basis for examining the teaching and learning of number theory in grades 5-8. Prerequisite: Math 1140 or 1296.

EDUC 4228. Teaching Mathematics with Technology. (3 cr.; A-F only; Every Fall) Using mathematics-based technology such as computer software, calculators, and Internet apps to examine the teaching and learning of mathematics. Prerequisite: Math 1140 or 1296.

EDUC 4234. Science, Technology, and Society. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Nontypical study of historical and cultural impact of natural science and technology on the earth and its inhabitants. Prerequisite: Minimum 30 credits, no grad credit.

EDUC 4347. Second Language Acquisition & ELL: How Second Languages are Learned & Methods for Teaching. (2 cr.; A-F only; Every Fall & Spring) English language learners are increasing as a significant demographic in US P-16 classrooms. This course provides a theoretical and research-based introduction to Second Language Acquisition, including description of theoretical, pedagogical and policy issues. Candidate will learn classroom methodology for instruction ELL, and best practices for developing literacy skills in diverse classrooms, with attention to oral, written, academic literacy, and reading comprehension. Prerequisite: Admission to IESE program and successful completion of Block One courses and associated field experience; no grad credit; will not be granted if already received for ELED 4347.

EDUC 4381. Teaching Indigenous Students. (3 cr.; A-F or Audit; Every Fall & Spring) Survey of contemporary and historical Indigenous education; evaluation of attitudes toward Indigenous students: direct interaction with Indigenous parents and students; development of culturally sensitive teaching plans; specific cultural characteristics of Indigenous communities; exploration of American Indian communities and the well being of American Indian children and youth through the statutory and programmatic iterations of these themes. Course is divided into two parts: (1) Focus on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. Prerequisites: Minimum 60 credits, no grad credit; credit will not be granted if already received for EDUC 5081. (2) Focus on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. Prerequisites: Minimum 60 credits, no grad credit; credit will not be granted if already received for EDUC 5081.

EDUC 4500. Professional Issues and Ethics. (1 cr.; A-F or Audit; Every Fall & Spring) Provides an overview of several topics affecting practicing teachers including: employment preparation (resume, cover letter, interviewing skills), licensure application, professional organizations, professional codes of ethics, and district procedures. Offered concurrent with student teaching in order to provide options for discussion during practice. Prerequisite: Admission to the elementary education program, successful completion of courses in block one and block two, no grad credit.

EDUC 4990. Education Teacher Performance Assessment. (0 cr.; No Grade Associated; Every Fall, Spring & Summer)
EDUC 5991. Independent Study. (0.5-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Directed independent study, readings, and/or projects of interest to education students. prereq: instructor consent; no grad credit

EDUC 5995. Education Special Topics. (1-4 cr.; A-F or Audit; Periodic Summer) Special topics as assigned

EDUC 5081. American Indian Education Policy Development in the 20th Century. (3 cr.; A-F or Audit; Every Fall & Spring) Focus on the development of educational policies for American Indian people through the 20th Century. Examines shifts in educational policy the impact of such policy and how American Indians reacted to the nature of education programs and sought to reform schools to better meet tribal and community needs. Features of American Indian education policy development, relationship and role of research and science, public perceptions of American Indians, Indian activism, and tribal and community involvement in educational policy will be discussed and analyzed. A number of policy themes will be explored such as language and culture, self-determination and control, expansion of educational opportunities and the well-being of American Indian children and youth through the statutory and programmatic iterations of these themes. The focus will be on cultural pluralism and the importance of education today that support American Indian/Alaska Native self-determination, identity and cultural integrity. prereq: Graduate student; credit will not be granted if already received for EDUC 4081

EDUC 5128. Urban Education. (3 cr.; Student Option; Periodic Fall, Spring & Summer) Combines on-site experience in an urban educational setting with reading and reflection. Develops knowledge, skills, attitudes, motivation, and commitment to work individually and collectively with poor children in urban schools.

EDUC 5227. Number Theory for Teachers in Grades 5 - 8. (3 cr.; A-F or Audit; Every Fall & Summer) The development of number concepts and theories through investigations and applications of discrete mathematics strategies provides the basis for examining the teaching and learning of number theory in grades 5 - 8. prereq: Math 1141 or 1296 or 1596

EDUC 5229. Teaching Middle School Mathematics. (2 cr.; A-F or Audit; Every Summer) The development of middle school concepts through problem-based investigations and applications of standards provides the basis for examining the teaching and learning of mathematics in grades 5 - 8.

EDUC 5230. Indigenous Peoples and Environmental Sustainability. (2-3 cr.; A-F or Audit; Every Fall) This course will examine the intersection of Indigenous peoples, traditional and contemporary practices of sustainability, planetary ecological issues, the impact on Indigenous peoples and the possibilities provided by Indigenous place-based/environmental education. Indigenous peoples cultural relationship to place will also be explored along with a critical examination of the impact colonization, patriarchy and capitalism has had on Indigenous homelands and centers of power. Attention will be given to Indigenous initiatives that are working toward the healing of their homelands and the planet. pre-req: instructor consent

EDUC 5295. Special Topics: (Various Titles to be Assigned). (0.5-4 cr. [max 8 cr.]; A-F or Audit; Every Summer) Current issues in Education to meet needs and interests of various groups, particularly practicing professionals.

EDUC 5340. Interacting With Diverse Families. (3 cr.; A-F or Audit; Every Fall) Issues relating to working with and advocating for families from diverse backgrounds and/or with diverse needs. Emphasis on linguistically diverse families, immigrant families, families headed by single parents, families with members with a disability, families headed by lesbian/gay parents. prereq: 90 cr or instructor consent

EDUC 5401. Creative and Intellectually Gifted Children. (2 cr.; A-F or Audit; Every Fall, Spring & Summer) Identification, characteristics, and service needs of creative and intellectually gifted children; various programs to meet needs.

EDUC 5412. The Computer in Education. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to computer use in instructional settings. PC and Mac platforms. Develops basic skills using software commonly used by educators. Teaching strategies using computer-assisted instruction.

EDUC 5413. Teaching With Technology. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Develops basic computer and educational technology skills focusing on using microcomputers for communications. prereq: 3412 or 5412, min 60 cr or coll grad or instructor consent

EDUC 5414. Using Technology for the Administrative Tasks of Teaching. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Develops basic computer and educational technology skills focusing on using microcomputers for administrative tasks of teaching. prereq: Min 60 cr or coll grad; 3412 or 5412, 5413 or instructor consent

EDUC 5415. Teaching Online and Hybrid Courses. (4 cr.; A-F or Audit; Periodic Spring & Summer) Designing completely online courses and hybrid (partially face-to-face and partially online) courses. Instructional design, methods of teaching, creating learning activities, technology tools, social dimensions, assessment of student learning, prereq: Min 60 cr or coll grad, 3412 or 5412, 5413, 5414 or instructor consent

EDUC 5500. Practicum in Education. (1-12 cr.; S-N or Audit; Every Fall & Spring) Arranged opportunity for persons interested in gaining practical experience in a nontraditional educational program under direction and supervision of faculty. Location, type of experience, duration of experience, and assessment are determined in consultation with faculty supervisor.

EDUC 5590. Research Project. (1-6 cr.; [max 36 cr.]; S-N only; Every Fall, Spring & Summer) Faculty-supervised research project required for MEd prereq: Instructor consent

EDUC 5591. Independent Study. (0.5-4 cr. [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed independent study, readings, and/or projects of interest to students in education.

EDUC 5593. Special Area Project. (0.5-4 cr. [max 14 cr.]; A-F or Audit; Every Fall, Spring & Summer) Independent project for advanced students to substantially further their theoretical knowledge base or professional competencies.

EDUC 5595. Special Topics: (Various Titles to be assigned). (0.5-4 cr. [max 16 cr.]; A-F or Audit; Periodic Fall & Spring) Topics selected from education to meet needs and interests of different groups of students.

EDUC 7001. Introduction to Graduate Study. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Expectations of graduate study, scholarly writing and online learning. Develop skills in using the Internet for scholarly research and writing, culminating in writing of a literature review. prereq: MEd candidate or instructor consent; credit will not be granted if already received for EHS 7001

EDUC 7002. Human Diversity and Exceptionality. (3 cr.; A-F or Audit; Periodic Fall & Spring) Stresses the importance of diversity and exceptionality in educational settings, and its relevance to teaching and learning strategies, assessment, and professional community building. The concepts of privilege and power will be explored from the standpoint of the educator and his/her role in the educational setting. prereq: MEd candidate or instructor consent; credit will not be granted if already received for EHS 7002

EDUC 7004. Foundations of Educational Research. (3 cr. [max 4 cr.]; A-F or Audit; Periodic Fall & Spring) Provides foundational knowledge in being a consumer of and conducting scholarly educational research. Designed to provide an orientation to existing educational research and
EDUC 7005. Teaching and Learning in a Systems Context. (3 cr.; A-F or Audit; Periodic Spring & Summer)
Provides an in-depth investigation of systems theory in an educational context: teaching and learning systems in curriculum, in teaching methods, educational administration and leadership, and educational change. History, current theory, application and tools of systems thinking will be studied. prereq: credit will not be granted if already received for EHS 7005

EDUC 7006. Ethics and Professionalism in Education. (2 cr.; A-F or Audit; Periodic Fall & Spring)
Offers a synthesis of previous courses, viewed from the context of ethics and ethical dilemmas that touch on diversity, systems change, educators’ roles, professional competencies, and leadership roles. prereq: credit will not be granted if already received for EHS 7006

EDUC 7008. Foundations of Teaching and Learning: Curriculum Theory and Design. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Broad-based foundational course designed to study advanced learning theory and curriculum design, and develop skills in critical analysis of teaching application and student outcomes. Focuses on the importance of working in the context of a professional community. prereq: credit will not be granted if already received for EHS 7008

EDUC 7009. Assessment of Learning. (3 cr. [max 12 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
Focuses on the design and application of appropriate learning assessment strategies that consider the pedagogical intent, state, federal, and subject standards, and the diversity for all learners. Teaching theory and practice will be viewed in the context of learning assessment. prereq: credit will not be granted if already received for EHS 7009

EDUC 7011. Integrated Research in Practice. (3 cr.; A-F or Audit; Every Fall & Spring)
Provides in-depth knowledge and skills in quantitative, qualitative and mixed methods research methodology, and designed to guide students through the process of designing and conducting a scholarly research project. prereq: 7004 or instructor consent

EDUC 7016. Qualitative Methods for Educational Research. (3 cr.; S-N or Audit; Every Fall, Spring & Summer)
The course is designed to assist MEd and other graduate students in the use of qualitative data collection, analysis, and reporting methods in qualitative and mixed methods designs for research in education and related fields. The course is student project based, providing students support in completing data collection and analysis for their capstone or thesis projects. Students will review multiple methods for data collection and analysis, with a primary focus on the methods identified in their own project design. pre-reg: instructor consent

EDUC 7018. Statistics for Educational Research. (3 cr.; S-N or Audit; Every Fall, Spring & Summer)
The course is designed to assist MEd and other graduate students in the use of quantitative data collection, analysis, and reporting methods for research in education and related fields. The course is student project based, providing students support in completing data collection and analysis for their capstone or thesis projects. Students will review multiple methods for data collection and analysis, with a primary focus on statistical analysis for quantitative data identified in their own project design. pre-reg: instructor consent

EDUC 7040. Principles of Adult Education. (3 cr.; A-F or Audit; Periodic Summer)
Philosophy and application of adult education principles.

EDUC 7120. Models of Indigenous Leadership. (3 cr.; A-F or Audit; Periodic Summer)
The course will examine Indigenous leadership models throughout history: traditional leadership, leadership during the period of colonialism, contemporary leadership, and the future of Indigenous leadership. Leadership in Indigenous contexts, colonized leadership, power, Indigenous sovereignty, hereditary leadership, military leadership and spiritual leadership will be examined. Emphasis will be placed on the place of Indigenous leadership models within a contemporary context. pre-reg: credit will not be granted if already received for EHS 7008

EDUC 7130. Indigenous Knowledge and Worldview. (2-3 cr.; A-F or Audit; Periodic Summer)
This course focuses on how different Indigenous peoples know and learn about the world. The diverse metaphysical experiences of various tribes are explored as a means of demonstrating the range of beliefs and ways of knowing within Indigenous life. Perspectives on language, experience, and philosophical views of language, culture, and land are considered with respect to both contemporary and traditional environments. Indigenous research paradigms and methodologies are explored as a means of helping students contextualize research interest. pre-reg: credit will not be granted if already received for EHS 7008

EDUC 7150. Culturally Based Education. (2-3 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Explores the historic, social, cultural, and political-legal contexts of the education of Native American peoples in the United States and the developing role of culturally based curricular, pedagogical, and educational development strategies for Native American students, communities, and tribal societies. Examines theoretical approaches and research on the role and impact of culturally based education on academic and social cultural outcomes for Native American learners and communities. pre-reg: grad student

EDUC 7160. Culture, Language and Society. (3 cr.; A-F or Audit; Periodic Summer)
This course will explore the relationships between language, culture, and society as it pertains to the experiences of Indigenous peoples from around the world. Critical topics of exploration include semiotics, socio-cultural dimensions of language use, identity, and the connection between society and schooling in language and culture revitalization. General definitions and associated interrelationships of language, culture, and society will be explored from Western and Indigenous perspectives. pre-reg: grad student

EDUC 8001. Historical, Social, and Philosophical Foundations of Education. (3 cr.; A-F only; Summer Even Year)
Survey of the historical, social, and philosophical issues in education, in order to prepare and build a foundation for doctoral level students in education. pre-reg: credit will not be granted if already received for EHS 7008

EDUC 8005. Curriculum: Theory into Practice. (3 cr.; A-F only; Fall Odd Year)
Overview of curriculum mapping, methods for analysis of scope and sequence and articulation, current curriculum theory, standards, and curriculum audit strategies, purposes and responsibilities. pre-reg: credit will not be granted if already received for EHS 7008

EDUC 8016. Theory and Practice of Qualitative Research Methods. (3 cr.; A-F only; Fall Even Year)
Qualitative research traditions and methods, and practice with the skills and attitudes necessary to successfully conduct qualitative research. pre-reg: 8015 or equivalent, credit will not be granted if already received for EHS 7008

EDUC 8020. Doctoral Seminar. (1 cr. [max 6 cr.]; S-N only; Every Fall, Spring & Summer)
Review of current research around best practices, or focused strategies for progression with the program or the dissertation. pre-reg: credit will not be granted if already received for EHS 7008

EDUC 8444. FTE: Doctoral. (3 cr.; A-F or Audit; No Grade Associated; Every Fall, Spring & Summer)

EDUC 8666. Doctoral Pre-Thesis Credits. (1-6 cr. [max 12 cr.]; No Grade Associated; Every Fall, Spring & Summer)
EDSE 4215. Teaching Reading and Literature: Grades 5-12. (4 cr. [max 5 cr.]; A-F or Audit; Periodic Fall & Spring) Teaching procedures, objectives, and materials emphasis on reading in various subject-matter fields, practicum experience. prereq: Major or pre teaching courses as pedagogy for improving literacy. Spring & Summer)

EDSE 4222. Teaching Mathematics: Grades 5-12. (4 cr.; A-F or Audit; Every Fall) Standards for secondary mathematics as they apply to learning, teaching, curriculum, and integration of technologies in mathematics grades 5-12; emphasis on use of problem approach to mathematical sense-making. prereq: Admission to EdSe program, 4204 or instructor consent, no grad credit

EDSE 4244. Teaching Social Studies: Grades 5-12. (3 cr.; A-F or Audit; Every Spring) History and philosophy of social studies education; social studies objectives; curriculum design; instructional planning and use of resources; evaluation procedures. prereq: Admission to EdSe program, 3204 or instructor consent; no grad credit

EDSE 4255. Teaching Science: Grades 5-12. (3 cr.; A-F or Audit; Every Fall) Principles of psychology applied to teaching; examination of adolescent growth and development of science education, goals and purposes of science education in secondary schools and post-secondary education settings; inquiry, methods and materials' evaluation procedures; current trends; and compare adolescent learning to adult learning of science education. prereq: 5000, 5204, 5501, 5525

EDSE 4501. Adolescent/Adult Development and Learning Theory. (3 cr.; A-F or Audit; Every Fall & Spring) Principles of psychology applied to teaching; examination of adolescent growth and development; classroom management. prereq: Admission to EdSe program; no grad credit

EDSE 4525. Assessment for Secondary Education. (3 cr.; A-F only; Every Fall & Spring) An exploration of topics in responsive and responsible assessment of student learning. Topics include types and appropriate uses of classroom assessment strategies, large-scale and high stakes testing, backwards design, rubrics, checklists, and other evaluative tools and techniques. prereq: instructor consent; no grad credit

EDSE 4600. Student Teaching. (3-12 cr.; S-N or Audit; Every Fall & Spring) Supervised practicum in secondary or middle school under direction of licensed teacher. Demonstration of subject matter, teaching competence, and potential for future improvement. prereq: 4100, 4501, appropriate methods course; no grad credit

EDSE 5000. Introduction to Post-Secondary Teaching. (2 cr.; A-F or Audit; Every Fall) Introduction to Teaching will provide a brief overview of teaching theory, student and teacher expectations, development of a syllabus, lesson planning goals, rubrics, assignments, student evaluation/assessment, how to submit grades, online teaching using electronic course platforms, classroom management and other topics pertinent to teaching adult learners. This class will provide support for new graduate teaching assistants and new faculty at community colleges. prereq: grad student or community college faculty

EDSE 5204. Designing Learning Environments. (3 cr.; A-F or Audit; Every Fall & Spring) A comprehensive course that describes the characteristics of effective teachers, introduces teaching strategies using the Universal Backward Design framework, how to design effective learning environments, how to develop goals and action plans, manage data, review student work, plan lessons, and teach with technology. prereq: Grad student or new faculty at a community college; instructor consent

EDSE 5255. Teaching Science Grades 5 - 12. (3 cr.; A-F or Audit; Every Spring) The course serves to help teacher candidates focus on important elements to teaching of science in secondary and post-secondary education settings. Topics include: historical development of science education, goals and purposes of science education in secondary schools and post-secondary education settings; inquiry, methods and materials' evaluation procedures; current trends; and compare adolescent learning to adult learning of science education. prereq: 5000, 5204, 5501, 5525

EDSE 5501. Adolescent/Adult Development and Learning Theory. (3 cr.; A-F or Audit; Every Fall & Spring) Principles of psychology applied to teaching; examination of adolescent growth and development and classroom management. Graduate students will include adult learning theory in terms of growth and development and how to organize and manage post-secondary classroom. prereq: Grad student or faculty at post-secondary institution or instructor consent

EDSE 5525. Assessment for Secondary Education. (3 cr.; A-F or Audit; Every Fall & Spring) An exploration of topics in responsive and responsible assessment of student learning. Topics include types and appropriate uses of classroom assessment strategies, large-scale and high stakes testing, backwards design, rubrics, checklists, and other evaluative tools and techniques. Graduate students will complete an adult based project to develop a model of assessment to measure adult learners in their classes. prereq: graduate student, faculty at community college or instructor consent

Education/Human Service Pro (EHS)

EHS 799. CEHSP Masters Active Status. (0 cr. : No Grade Associated; Every Fall, Spring & Summer) Maintains continuous enrollment for collegiate masters students who have finished required coursework and are finishing the final project. Does NOT include eligibility (athletic, defer
EDAD 5911. Leadership and Personal Growth. (3 cr.; A-F or Audit; Every Summer) An overview of leadership from a theoretical perspective. Learners will begin to see the role and styles of leadership in relationship to the culture of schools and communities. Prereq: EdAd lic program or collegiate grad program admission or instructor consent

EDAD 5912. Supervision of Teachers and School Staff. (3 cr.; A-F or Audit; Every Fall) Includes applications and philosophies of supervision of teachers/principals, staff development, motivation, attention to diversity, evaluation, Minnesota teacher rules ad process for hiring and for dismissal, interpersonal communications, and human resource management. Prereq: EdAd lic program or collegiate grad program admission or instr consent; no Grad School cr

EDAD 5913. Communication and Community Relations. (3 cr.; A-F or Audit; Every Summer) Schools’ public and media relations, communication needs of internal/external publics, processes to solicit support for initiatives, review of crises plans. Prereq: EdAd lic program or collegiate program admission or instructor consent

EDAD 5914. Education Policy. (3 cr.; A-F or Audit; Every Spring) Decision-making and school governance based on current laws and mandates. Rules, reporting, and regulations governing private, public, parochial, BIE, Community Education, and Alternative schools will be studied

EDAD 5915. Operations Resource Management and Scheduling in Education. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Focus on skills, knowledge and dispositions that enable administrators to plan and schedule work in ways that ensure that resources are used appropriately and goals are met. Prereqs: EdAd lic program or collegiate graduate program admission or instr consent; no Grad School cr

EDAD 5916. Curriculum and Instruction and Assessment. (3 cr.; A-F or Audit; Every Fall) Overview of curriculum design. Both traditional and backwards design with practice in mapping, scope and sequence, large-scale testing, assessment of individual and systemic growth, early child education, and providing opportunities for all students. Prereq: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 5917. EdAd Technology Seminar. (1 cr. [max 10 cr.]; S-N or Audit; Every Summer) Showcases school management systems and innovation in educational technology, research in area schools, and current trends in leadership and educational administration.

EDAD 5918. Continuous Improvement Processes for Schools. (3 cr.; Student Option; Every Summer) Examines effective data-driven continuous improvement best practices in schools. Learners will examine strategic planning, accreditation processes, state and federal accountability, AYP, reporting in order to continue funding flow and establishment of effective leadership terms. Prereq: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 5919. Superintendent. (3 cr.; A-F or Audit; Every Fall) Examine the level of decision making that differentiates district administration and responsibility unique to the position including creating district level mission, vision, and strategic planning; contract negotiation; working with local, state, and federal agencies, program coordination at all levels, school board relations, and clear establishment of expectations. Prereq: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 5920. Problem Solving for Principals: Student Discipline and Behavior Management. (3 cr.; A-F or Audit; Every Fall) Case-study based course will examine theories of behavior management and evaluate the effectiveness of discipline approaches through lenses of development, culture, leadership styles and legal aspects of discipline for all students. Prereq: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 5921. Principals. (3 cr.; A-F or Audit; Every Fall) Orients individuals to the responsibilities of the principal's positions in schools and districts. Prereqs: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 5922. Problem Solving for Superintendents. (3 cr.; A-F or Audit; Every Summer) Presents solutions and pathways for superintendents, including labor relations, contract negotiations, bonds and referenda, policy creation and relationships with school boards and communities. Prereq: EdAd lic program or collegiate grad program admission or instructor consent

EDAD 5923. Field Exploration. (2 cr.; S-N only; Every Summer) Candidates for licensure as educational administrators will experience working in school systems that do not follow the traditional American model of delivery of programs and instruction. Travel is required and 20 hours of internship will be coordinated through the office of the Educational Administration Program Coordinator. Prereq: EdAd lic program or collegiate grad program admission or instructor consent

EDAD 5997. Professional Competency Assessment: Principals. (1 cr.; A-F or Audit; Every Fall) Capstone for the educational administrative program for principals. Learners will complete an electronic portfolio which includes valid evidence of competency for each core leadership and principal's competencies required for certificate approval. Candidates will prepare for final panel presentations. Prereq: EdAd lic program or collegiate graduate program admission or instructor consent

EDAD 6990. Internship in Teaching for Administrators. (3 cr.; [max 9 cr.]; A-F or Audit; Every Fall & Spring) Intended to assist the candidate in meeting the requirements of the Rules of the MN State Board of Education. Chapter 352.0700 ADMINISTRATIVE LICENSURE WITHOUT TEACHING EXPERIENCE. Subp. 3a. Teaching knowledge and skills. An applicant shall demonstrate basic teaching knowledge and skills as required by part 8710.2000. Prereq: Admission to the Ed Ad program

EDAD 6997. Internship: Principals. (6 cr.; S-N only; Every Fall) To place the candidate for licensure with practicing, licensed principals for a minimum
of 320 total hours. Candidates must serve 80 hours of internship with a mentor and students that are not at the level of the candidate's teacher licensure. prerequisite: EDAD lic program or collegiate graduate program or instructor consent

EDAD 6998. Internship: Superintendents. (1-6 cr.; S-N only; Every Fall) Candidates for licensure will be working with a practicing, licensed superintendent for a minimum of 320 total hours. University of Minnesota Duluth candidates are also encouraged to serve additional hours in a situation of alternative delivery, prerequisite: EDAD lic program or collegiate graduate program admission or instructor consent

Electrical Engineering (EE)

EE 1001. Introduction to Electrical Engineering. (2 cr.; A-F or Audit; Every Fall) Definition and description of electrical engineering. Digital and analog systems. Electrical engineering lab equipment and software. Selected specialties. (2 hrs lect) prerequisite: CE, ChE, CS, EE, IE, ME. EP majors only

EE 1315. Digital Logic. (4 cr.; A-F or Audit; Every Fall & Spring) Binary number system and digital coding techniques. Boolean algebra, combinatorial logic circuits, and minimization techniques. Synchronous sequential circuits and state reduction techniques. Medium Scale Integration (MSI) combinational components. prerequisite: CE, ChE, CS, EE, IE, ME majors or instructor consent


EE 2111. Linear Systems and Signal Analysis. (4 cr.; A-F or Audit; Every Fall & Spring) Signal and system modeling concepts, system analysis in time domain, Fourier series and Fourier transform. Discrete time domain signals and systems, Z transform, applications. (3 hrs lect, 3 hrs lab) prerequisite: 2006

EE 2212. Electronics I. (4 cr.; A-F or Audit; Every Fall & Spring) Diodes, BJTs, FETs, ideal operational amplifiers, DC analysis, small signal models, and analysis; single-stage circuits design; power amplifiers. (3 hrs lect, 3 hrs lab) prerequisite: 2006


EE 3235. Electronics II. (4 cr.; A-F or Audit; Every Fall & Spring) Multistage circuits, frequency analysis, non-ideal operational amplifiers, feedback and stability, oscillators, filters. (3 hrs lect, 3 hrs lab) prerequisite: 2212


EE 4311. Design of Very Large-Scale Integrated Circuits. (3 cr.; A-F or Audit; Periodic Fall) Philosophy of and techniques for designing VLSI circuits in CMOS technology. Full- and semi-custom design techniques. Digital, analog, and hybrid CMOS circuits and systems. Substantial design project required. (3 hrs lect) prerequisite: 3235 or instructor consent

EE 4321. Computer Networks. (3 cr.; A-F or Audit; Periodic Fall) Network classification and services. Protocol and communication architectures. Hardware components: multiplexers, concentrators, bridges, routers, access servers. (3 hrs lect) prerequisite: 2325

EE 4341. Digital Systems. (4 cr.; A-F or Audit; Periodic Spring) Digital logic family characteristics. Medium Scale Integration (MSI) components and applications. Programmable Logic Devices (PLDs). Alternative clocking techniques. Computer arithmetic circuits and memory design. Fundamental mode asynchronous finite-state machine design. (3 hrs lect, 3 hrs lab) prerequisite: 2325, no graduate credit; credit will not be granted if already received for ECE 3341


EE 4611. Introduction to Solid-State Semiconductors. (3 cr.; A-F or Audit; Every Spring) Fundamentals of solid-state semiconductors and devices. Quantum mechanical concepts and atomic states, solid-state structure, band structure, semiconductor statistics, and transport. (3 hrs lect) prerequisite: Phys 2012 or 2015; credit will not be granted if already received for ECE 4896

EE 4896. Co-op in Electrical Engineering. (1 cr. [max 6 cr.]; S-N or Audit; Every Fall, Spring & Summer) Career-related work experience with employer closely associated with student's academic area. Students must have department approval for the course prior to starting the Co-op. Midterm status report and final written report with employer survey must be submitted to the EE department. This course cannot be counted towards EE degree requirements or EE technical electives. prerequisite: BSEE or MSE standing in Electrical Engineering, department consent

EE 4899. Senior Design Project I. (1 cr.; A-F or Audit; Every Fall & Spring) Selection and completion of team project approved and supervised by faculty. See also ECE 4999; prerequisite: WRIT 3130, BSEE or BSEP cand, instructor consent; no grad credit, credit will not be granted if already received for 4951

EE 4951. Design Workshop. (4 cr.; A-F or Audit; Periodic Spring) Study of a selected topic; its application to a design project, completed individually or in a small group. Focuses on a different method each semester offered. Completion satisfies requirement for a senior design project. prerequisite: WRIT 3130 previous or concurrent registration allowed, BSEE or BSEP cand, instructor consent; no Grad credit, credit will not be granted if already received for 4951

EE 4991. Independent Study. (1-3 cr.; A-F or Audit; Periodic Fall & Spring) Special projects not available in regular curriculum. Independent investigation, research studies, or survey of selected projects or problems. prerequisite: instructor consent; does not qualify as EE or ECE technical elective

EE 4999. Senior Design Project II. (3 cr.; A-F or Audit; Every Fall & Spring) Students present senior design project results in formal written and oral reports after making refinements. Complete documentation of results in professional manner required. Results must be presented in an oral report with other senior project team members. ECE 4899 and ECE 4999 must be completed within one year for credit. prerequisite: 4899 and BSEP
EE 5151. Digital Control System Design. (3 cr.; A-F or Audit; Periodic Spring) Digital control system characteristics: transient and steady-state responses, frequency response, stability. Digital control system design using transform techniques. Controllability and observability. Design of digital control systems using state-space methods: pole placement and observer design, multivariable optimal control. Implementation issues in digital control prereq: 3151; credit will not be granted if already received for 4151

EE 5161. Linear State-Space Control Systems. (3 cr.; A-F or Audit; Fall Even Year) State space representation of control systems and analysis and design. Stability, controllability, observability, realizations, state estimator or observer design and state feedback design. pre-req: 3151 or instructor consent

EE 5211. Advanced Analog Integrated Circuit Design. (3 cr.; A-F only; Periodic Fall) Provides ECE students with fundamental analysis and design skills for transistor-level analog integrated circuits, such as operational amplifiers, transconductance amplifiers, bandgap references, amplifier-based filters, analog-to-digital converters, digital-to-analog converters and phase-locked loop. Project-oriented with a focus on transistor-level design of analog circuits from transistor sizing to layout in an integrated circuit environment such as Cadence tool sets. The expected outcomes are that students are able to design an analog system of medium complexity at transistor-level. prereq: 3235 or equiv

EE 5311. Design of Very Large Scale Integrated Circuits. (4 cr.; A-F or Audit; Every Fall) Philosophy of and techniques for designing VLSI circuits in CMOS technology. Full-custom and semi-custom design techniques for VLSI circuits. Digital, analog and mixed-signal VLSI circuits and systems. Substantial design project required. (3 hrs lect and 3 hrs lab), pre-req: EE 2212 or grad student

EE 5315. Multiprocessor-Based System Design. (3 cr.; A-F or Audit; Periodic Fall) Parallelism, interconnection networks, shared memory architecture, principles of scalable performance, vector computers, multiprocessors, multicomputers, dataflow architectures, and supercomputers. prereq: 2325; credit will not be granted if already received for 4315

EE 5321. Introduction to Robotics and Mobile Robot Control Architectures. (3 cr.; A-F or Audit; Periodic Spring) Basic concepts and tools for the analysis, design, and control of robotic mechanisms. Topics include basic robot architecture and applications to dynamical systems, mobile mechanisms, kinematics, inverse kinematics, trajectory and motion planning, mobile robots, collision avoidance, and control architectures. prereq: 3151

EE 5477. Antennas and Transmission Lines. (3 cr.; A-F or Audit; Periodic Spring) Theory and performance of antennas and transmission lines. Topics: Allocation of RF spectrum, radiation theory, EM wave propagation, ground effects, interference, antenna performance metrics, transient and sinusoidal transmission line behavior, bounce diagrams, Smith chart, waveguide theory, modeling with the numerical electromagnetics code (NEC), unlicensed wireless applications, specific antenna designs and applications, class demonstrations. prereq: 3445; credit will not be granted if already received for 4477

EE 5479. Antennas and Transmission Lines Laboratory. (1 cr.; A-F or Audit; Every Spring) This laboratory course provides hands-on experience with designing, constructing, and measuring the performance of radio frequency (RF) antennas and transmission lines. Concepts include velocity factor, propagation factors, characteristic impedance, tuning stubs and matching sections, resonance, parasitic elements, gain, directivity, return loss and RF safety. This course supports the theory presented in EE 5477 (Antennas and Transmission Lines) and is optional for those enrolled in or having completed EE 5477. prereq: 4477 pre or co-req

EE 5501. Energy Conversion System. (3 cr.; A-F or Audit; Every Fall) Theory, design and operation of conventional and alternative electrical energy conversion systems. Carbon dioxide cycle, Earth/Sun radiation balance, and environmental impacts. Power delivery systems and integration of conversion systems with the grid. Development of generation portfolios. Impact of energy policies and current energy issues. Case studies. prereq: Chem 1151 or 1153 and 1154

EE 5522. Power Electronics I. (3 cr.; A-F or Audit; Every Spring) Power semiconductor devices; traditional power converters; ac-dc converters: half-wave and full-wave rectifiers; dc-dc converters; traditional and transformer derived choppers; dc-ac converters: single-phase and three-phase inverters; ac-ac converters; pulse-width modulation; applications. prereq: 3235

EE 5533. Grid-Resiliency, Efficiency and Technology. (3 cr.; A-F or Audit; Every Fall) Control and architecture of grid, smart grid and microgrid; resiliency under physical and cyber attacks; grid efficiency via sensors, networks and control; technology including standards and protocols for cybersecurity and protection of the grid; case studies and testbeds. prereq: 2006 or instructor consent

EE 5611. Microelectronics Technology. (3 cr.; A-F only; Periodic Fall) Various fabrication processes in silicon-based microelectronic circuits and devices: lithography, oxidation, diffusion, thin film deposition, etching and integration of various technologies; material defects analysis and device characterization skills; design of fabrication process with SUPREME IV simulator; fabrication technologies involved in other devices: optical devices, MEMS and semiconductor nanostructures. prereq: 3235

EE 5741. Digital Signal Processing. (3 cr.; A-F or Audit; Periodic Spring) Discrete linear shift-invariant systems, z- and Fourier transform, sampling, discrete-time processing of signals, reconstruction of analog signals, filters and filter structures in direct, parallel, and cascaded forms, FIR & IIR digital filter design, impulse-invariant, bilinear transform & window functions, FFT, introduction to image processing. prereq: 2111; credit will not be granted if already received for 4741

EE 5742. Pattern Recognition and Machine Learning. (4 cr.; A-F or Audit; Fall Even, Spring Odd Year) Various methods of pattern recognition, non-parametric techniques, linear discriminant functions, support vector machines, statistical classification, min-max procedures, maximum likelihood decisions and case studies. prereq: STAT 3611, senior or graduate standing in science or engineering or instructor consent; some basic concepts in linear algebra and probability theory.

EE 5745. Medical Imaging. (3 cr.; A-F or Audit; Spring Odd Year) Introduction to the methods and devices for medical imaging, including x-ray imaging, x-ray computer tomography (CT), nuclear medicine (single photon planar imaging, single photon emission computer tomography (SPECT), and positron emission tomography (PET), magnetic resonance imaging (MRI), and ultrasound imaging. The physics and design of systems, typical applications, medical image processing, and tomographic reconstruction. prereq: EE (ECE) 2111, Math 3298 or instructor permission

EE 5765. Modern Communication. (4 cr.; Student Option; Every Fall) Design and analysis of modern communication systems; evaluation of analog and digital modulation techniques. (3 hrs lect, 3 hrs lab) prereq: 2111; credit will not be granted if already received for 4765

EE 5801. Introduction to Artificial Neural Networks. (3 cr.; A-F or Audit; Periodic Fall) General techniques and theory of neural networks, their applications and limitations. The course particularly addresses the design issues and learning algorithms for diverse areas of applications. prereq: CS 1521, Math 3280, Stat 3611 or instructor consent; credit will not be granted if already received for 4801

EE 5831. Fuzzy Set Theory and Its Application. (3 cr.; A-F or Audit; Periodic Fall) Fuzzy sets and operations on fuzzy sets. Fuzzy relations and the extension principle. Linguistic variable and fuzzy IF-THEN rules. Fuzzy arithmetic. Fuzzy logic and approximate reasoning. Design of Fuzzy Systems from I/O data. Fuzzy logic--based control. Pattern...
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This course will prepare students to analyze, formulate, and solve optimization problems under different conditions to facilitate managerial decision-making. Topics covered include date collection, linear programming, network analysis, integer linear programming, goal programming, multi objective programming, nonlinear programming, and their application in the field of engineering and technology management field. Communicating results from quantitative analysis in an effective manner will also be covered. prereq: EMgt student or department approval

**EMGT 5160. Quality Management.** (3 cr. ; A-F Only; Fall Odd Year)

Global competitiveness, organizational culture, management role responsibilities, concepts for customer value, strategic management, measurement of customer value, organizing to improve systems, employee involvement, culture change and organizational learning, ISO 9000, quality awards. prereq: EMgt student or department approval

**EMGT 5220. Innovation Management.** (3 cr. ; A-F Only; Periodic Fall & Spring)

Key success factors of technological innovation will be identified by looking at the diverse economic, social, cultural, psychological and technical phenomena that comprise innovation. Questions that will be answered include why certain inventions successfully make it to the market but some others died; why some organizations keep coming up with innovations with tremendous business value but some others stay as followers; how to enhance creativity at individual, team, organizational, and national levels; what the emerging trend is in today's business innovation environment and how organizations should cope with it, etc. prereq: EMgt student or department approval

**EMGT 5230. Technical Forecasting.** (3 cr. ; A-F Only; Spring Even Year)

Statistical review, data sources, choosing a forecasting technique, moving averages, smoothing, regression analysis, time series analysis, the Box-Jenkins (ARIMA) methodology. prereq: EMgt Student or department approval

**EMGT 5240. Advanced Operations Management.** (3 cr. ; A-F Only; Every Spring)

Emphasis on quantitative methods for designing and analyzing manufacturing and service operations, simulation, and recent paradigms in manufacturing including just-in-time production, synchronous manufacturing, and agile manufacturing. Current competitiveness-enhancing techniques like continuous improvement, benchmarking, and business process re-engineering will also be covered. prereq: EMgt student or MBA student or department approval

**EMGT 5250. Legal, Ethical and Environmental Issues in Engineering.** (3 cr. ; A-F Only; Fall Even Year)

Covers topics in basic law, contracts, intellectual property, professional ethics, the responsible engineer, moral thinking, risk/safety/liability, employer responsibilities, product liability, and environmental responsibilities. Provides a historical perspective on society's environmental concerns, and discusses federal environmental statutes, our regulatory system, approaches to preventing and mitigating environmental problems, and the elements of an effective environmental management system. prereq: EMgt student or engineering candidate or department approval

**EMGT 5260. Advanced Decision Making for Engineering Managers.** (3 cr. ; A-F or Audit; Spring Even Year)

This course introduces students to a variety of tools that help them sharpen the judgment and improve the decision making process. The rational basis behind decisions under certainty, uncertainty, risk and conflicts will be evaluated. The analytical approach to decision making will be presented by combining the qualitative and quantitative aspects of management decisions. Mathematical foundations for conflict resolution in multi-criteria decision making will be introduced. Quantification of subjective judgment, the development of Hierarchical Decision Models and their sensitivity analysis will be covered. Methods to measure inconsistencies in individual and group decisions will also be discussed. prereq: EMGT student or departmental consent

**EMGT 5991. Independent Study in Engineering Management.** (1-4 cr. [max 6 cr.] ; Student Option; Every Fall, Spring & Summer)

Directed study of special interest topics not available in standard curriculum. Must be arranged with instructor before registration. May include readings, research and/or special projects. prereq: MSEM cand, department approval

**EMGT 5995. Special Topics: (Various Titles to be Assigned).** (1-3 cr. [max 9 cr.] ; A-F or Audit; Periodic Fall & Spring)

Selected current topics in engineering management. (Various titles to be assigned). prereq: EMgt student or department approval

**EMGT 8310. Project Methodology and Practice.** (3 cr. ; A-F only; Every Fall & Spring)

Applying research, analysis, and management skills to a topic or situation of current interest to industry. Demonstrating the ability to achieve results in a fixed time frame with limited resources. prereq: 5110, 5120, 5130, 5160

**EMGT 8333. FTE: Master's.** (1 cr. ; No Grade Associated; Periodic Fall & Spring)

No description. prereq: Master's student, adviser and DGS consent

**EMGT 8777. Thesis Credits: Master's.** (1-18 cr. [max 50 cr.] ; No Grade Associated; Every Fall, Spring & Summer)

No description. prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

**EMGT 8993. Engineering Management Seminar.** (1 cr. [max 2 cr.] ; S-N Only; Every Fall & Spring)

Reports on recent developments in engineering management and on research projects in the department. prereq: Grad student, department approval

**EMGT 8994. Directed Research.** (1-8 cr. ; Student Option; Every Fall, Spring & Summer)

Directed research or study on an advanced topic. prereq: MSEM or grad student, department approval

**English (ENGL)**

**ENGL 1001. Great American Authors.** (HUMANITIES; 3 cr. ; A-F or Audit; Every Fall & Spring)

Introduction to American authors important for their artistic mastery and/or significant role in American literary history.

**ENGL 1535. King Arthur in History, Literature, and Art.** (HUMANITIES; 4 cr. ; A-F or Audit; Periodic Fall & Spring)

Survey of historical accounts, and literary and artistic treatments of King Arthur in Latin, French, and German sources of the Middle Ages and in selected works in modern Arthurian literature.

**ENGL 1575. 20th-Century Literature.** (HUMANITIES; 4 cr. ; A-F or Audit; Periodic Fall & Spring)

Readings primarily in American, British, and Irish literature. prereq: Primarily for nonmajors

**ENGL 1582. Introduction to World Literatures.** (HUMANITIES,GLOBAL PER; 4 cr. ; A-F or Audit; Every Fall & Spring)

Sampling of literary works mainly from Middle East, Africa, Far East, and South America.

**ENGL 1583. Introductory Study of Major Topics in Contemporary African Literature.** (HUMANITIES,GLOBAL PER; 4 cr. ; A-F or Audit; Spring Odd Year)

Introductory study of the major topics in Contemporary African Literature. Draws on literary texts and films to broaden students' understanding of Africa's cultural, social, economic, and political challenges from colonization to globalization.

**ENGL 1585. Australian and New Zealand Literature and Culture.** (HUMANITIES,GLOBAL PER; 4 cr. ; A-F or Audit; Every Fall & Spring)

Introduces students to the literature and cultures of Australia and New Zealand focusing on the formation of national identity, both countries' relationship to Great Britain and the US, conventions like "mateship," and the cultural politics of aboriginal peoples.

**ENGL 1666. Tales of Terror.** (HUMANITIES; 4 cr. ; A-F or Audit; Periodic Fall & Spring)

Gothic masterpieces chiefly from English and American literature, with emphasis on sociological and psychological implications of the genre.

**ENGL 1777. Crime and Detective Fiction.** (4 cr. ; A-F or Audit; Periodic Fall & Spring)

Stories about crimes, criminals, and detectives have captivated, entertained, and challenged readers for centuries. What might we learn from these fictional accounts about crime and justice? What might we learn from them about
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ENGL 1818. Science Fiction in Film and Literature. (HUMANITIES; 4 cr. : A-F or Audit; Every Fall) This course introduces students to techniques of film and literary study through the genre of science fiction. It requires students to interpret literary works with attention to form, genre, plot, character and historical and cultural contexts. In addition, it introduces students to competing definitions of the genre while acquainting them with some of its subgenres such as dystopian and cyberpunk literature.

ENGL 1907. Introduction to Literature. (HUMANITIES; 3 cr. : A-F or Audit; Every Fall & Spring) Literary modes and methods of literary study and interpretation. prereq: Primarily for nonmajors

ENGL 2333. Harry Potter: Texts and Contexts. (HUMANITIES; 4 cr. : A-F or Audit; Fall Even Year) This class will examine the Harry Potter phenomenon by reading the novels from a variety of critical perspectives in the context of key works of fairy tale and fantasy by J.K. Rowling's literary predecessors, influences, and contemporaries.

ENGL 2535. The Bible in Literature, Art and History. (GLOBAL PER,HUMANITIES; 4 cr. : A-F or Audit; Fall Even Year) Study of how scripture has shaped literature and art, and how they have responded to scripture, with consideration of a range of historical, philosophical social and culture context: ancient, medieval, and contemporary. Readings and discussions about art and literature representing a variety of literary genres (e.g. poetry, drama, musical theatre, novel, graphic novel) that primarily address the Judeo-Christian tradition, but also offer comparisons with other scriptural traditions.

ENGL 2571. Contemporary Literature. (GLOBAL PER,HUMANITIES; 4 cr. : A-F or Audit; Every Fall & Spring) Readings in world literature since 1945. Close attention to literary texts from Americas, Europe, Africa, and Asia in their various aesthetic, historical, and cultural contexts. Topics of discussion might include the literary/aesthetic implications of post-colonialism, globalization, the Cold War and its aftermath, and technological developments. Liberal Education global perspectives credit will be effective fall 2015.

ENGL 2581. Women Writers. (HUMANITIES; 4 cr. : A-F or Audit; Periodic Fall & Spring) Feminist reading of selected plays, poetry, prose (including critical works) written by women writers. prereq: 30 credits or instructor consent

ENGL 2601. Reading Film. (HUMANITIES; 4 cr. : A-F or Audit; Periodic Spring) This course teaches students how to analyze movies and aims to inspire an on-going interest in film. The course aims to develop critical thinking and analytical skills to read texts as a wide range of films and theoretical texts, students learn to think critically about the meaning in terms of its uniquely cinematic attributes (e.g., editing, mise-en-scene, cinematography, lighting, sound, spectatorship) as well as its more literary qualities (e.g., narrative, character, genre). By the end of the semester, students will have the tools to think analytically about the films they encounter in future courses and in their movie-going lives more broadly. prereq: none

ENGL 2800. Nature Writing. (HUMANITIES; 4 cr. : A-F or Audit; Periodic Spring) This course introduces students to the practices and conventions of nature writing. Students learn to write creatively about the natural world and to read literary works that engage with it. Students produce creative work in a variety of forms and submit two of their productions for review by the class. The class also conducts numerous field trips to local outdoor settings, such as Tischer Creek and, if logistics permit, Gooseberry Falls, where they engage in nature writing directly and discuss relevant texts. By the end of the semester, students can expect to have a richer understanding of environmental literature, the ethical debates surrounding it, and the craft behind it, as hopefully, a deeper appreciation for nature.

ENGL 2906. Methods of Literary Study. (4 cr. : A-F or Audit; Every Fall & Spring) This is a foundational course for the English major and for successful literary study. Students will examine what it means to study literature, exploring ideas that have been central to literary studies over the past century. Students will apply different approaches to thinking about, researching, and writing about literature to a range of texts and genres. prereq: WRIT 1120

ENGL 2922. The Art of the Memoir: Reading and Writing Memoir. (; 4 cr. : A-F or Audit; Periodic Fall) Study of the memoir as a literary genre--its conventions, elements, and its historical importance--and as an art form. Use of critical approaches in the reading of memoirs. Directed practice writing the student's own memoir.

ENGL 3115. Writing Fiction. (4 cr. [max 8 cr.] : A-F or Audit; Every Fall) Writing of original fiction, with emphasis on the short story; structure and techniques learned from critical reading and classroom analysis. prereq: WRIT 1120, minimum 60 credits (6 credits literature) or instructor consent

ENGL 3121. Writing Poetry. (; 4 cr. : A-F or Audit; Periodic Fall & Spring) Writing of poetry, with emphasis on techniques learned through critical reading and classroom analysis.

ENGL 3223. Shakespeare. (HUMANITIES; 4 cr. : A-F or Audit; Periodic Fall & Spring) Introduction to Shakespeare. Selected plays from the histories, comedies, tragedies, and dramatic romances. Aspects of drama, such as structure, language, characterization, theme, and dramatic conventions examined in study of individual plays.

ENGL 3333. Children's Literature: Texts and Contexts. (; 4 cr. : A-F or Audit; Periodic Fall) Forms of children's literature, from folk and fairy tales to contemporary stories, poems, and novels for children; major historical, literary and critical issues affecting the production and reception of literature for children.

ENGL 3411. The Modern Short Story. (4 cr. : A-F or Audit; Periodic Fall & Spring) Study of the genre, emphasizing close reading and interpretation of the elements of short fiction in selected works. prereq: Minimum 60 credits (6 credits literature) or instructor consent

ENGL 3501. British Literature I. (HUMANITIES; 4 cr. : A-F or Audit; Every Fall) Chronological study of English literature from beginnings to late-18th century, emphasizing major works, authors, and important literary forms, styles, themes, and movements. prereq: Engl major or minor or teach comm art/lit major or minor or elem-middle educ com/art/lit specialization

ENGL 3502. British Literature II. (HUMANITIES; 4 cr. : A-F or Audit; Every Fall & Spring) Chronological study of English literature from late-18th to late-20th century, emphasizing major works, authors, and important literary forms, styles, themes, and movements. prereq: Engl major and minor

ENGL 3563. American Literature I. (HUMANITIES,CDIVERSITY; 4 cr. : A-F or Audit; Every Fall & Spring) Historical survey of important authors, movements, conventions, genres, and themes: origins to Civil War.

ENGL 3564. American Literature II. (HUMANITIES,CDIVERSITY; 4 cr. : A-F or Audit; Every Fall & Spring) Historical survey of important authors, movements, conventions, genres, and themes: Civil War to present.

ENGL 3573. Survey of African American Literature. (HUMANITIES,CDIVERSITY; 4 cr. : A-F or Audit; Fall Odd Year) Survey of African American literatures with an emphasis on cultural and historical contexts. Aesthetic reading, writing, and discussion of major themes such as slavery, freedom, race, gender, sexuality, class, violence, literacy, home, family, community, double-consciousness, Christianity, and language. Consideration of narrative strategies, literary tradition, and major genres such as songs, sermons, pamphlets, folktales, poetry, novels, drama, life writing, and film.

ENGL 3574. Reconstructing the Past in African Diaspora Literature. (; 4 cr. : A-F or Audit; Fall Even Year) Examines how African Diaspora literature engages with the past, with attention to the
debate about root vs. route as a foundation of Diasporic identity. Draws on various disciplines (literature, history, cultural studies, sociology, and music) to trace cultural and political imperatives of negotiating the past.

**ENGL 3601. Literature and Leadership.** (4 cr.; A-F or Audit; Spring Odd Year)
This class takes up the question of how literature can help us understand what makes effective leaders, and more broadly, how do we understand the concept of "leadership" itself. It examines representations of leadership styles and the challenges that leaders face through a close reading and analysis of literary texts from a broad range of cultures and time periods. In addition to using works of literature as case studies through which to explore issues in leadership, we will also look at what today's leaders are reading, as they seek to refine and develop their skills. pre-req: WRIT 1120

**ENGL 4097. Internship for English Majors.** (; 1-4 cr.; [max 8 cr.]; S-N only; Every Fall, Spring & Summer)
Supervised, practical experience in an approved business, agency, or organization seeking student interns with strong skills and/or knowledge in English. Placement is in a variety of work fields, including publishing, museumship librarianship, theatre, and public service. pre-req: minimum 60 credits, instructor consent; no grad credit

**ENGL 4292. Literature into Film.** (4 cr.; A-F or Audit; Periodic Spring)
Comparative study of novels and their film adaptations. pre-req: Minimum 60 credits (6 credits literature) or instructor consent

**ENGL 4300. Shakespeare in England.** (GLOBAL PER; 4 cr.; A-F only; Every Summer)
This short-term study abroad course will explore Shakespeare's theatre world in London and his birthplace in Stratford-upon-Avon, allowing students to experience, first-hand, how Shakespeare's plays were shaped by his environment in his own day, and how they were modified, adapted, and marketed over the next four centuries. By attending performances at modern reconstructions of the Globe and Blackfriars, students will see how Shakespeare wrote his plays to capitalize on the strengths (and minimize the limitations) of the physical theatre. Students will also tour the areas where Shakespeare lived and worked, such as Southwark and Blackfriars, and visit historic landmarks, such as The Tower, Westminster Abbey, and the Inns of Court, that figure prominently in his plays. A side-trip to Stratford-upon-Avon will help students better understand his upbringing—they will visit his birthplace and grammar school—and also see where he returned to retire early, live extravagantly, and die. Stratford-upon-Avon is also the home of the Royal Shakespeare Company, the world-famous acting troupe devoted to promoting Shakespeare's works. A principal focus of this course is to consider why Shakespeare is more popular today that he has ever been. Seeing Shakespeare performed by a range of actors (A-list to amateur), in a variety of theatres (West End to fringe), in a range of dramatic styles (period performance to avant-garde) will bring to life how Shakespeare is transformed from the page to the stage, how his works have been suited to changing tastes across the centuries, and why, despite the challenges posed by the language and subject matter of his plays, he continues to have a commanding presence in theatres and classrooms across the world. pre-req: instructor consent; also visit the UMD Study Abroad office

**ENGL 4375. Drama.** (; 4 cr.; A-F or Audit; Periodic Fall)
Selected playwrights, plays, types, traditions, or periods; relevant theoretical and critical writings. Authors and topics vary.

**ENGL 4802. English Language for Educators.** (4 cr.; A-F or Audit; Every Fall)
Application of linguistic and language learning theories to the teaching of communication arts, with emphasis on preparation of secondary school English teachers. Includes a focus on first and second language acquisition, approaches to language and grammar instruction, and the roles of language and dialect in culture and youth development. pre-req: LING 1811; no grad credit; credit will not be granted if already received for LING 4802

**ENGL 4902. Teaching Language, Cognition, and Writing.** (4 cr.; A-F only; Every Fall)
Theory and practice of teaching composition. Includes cognitive theories of the composition process, teaching, and writing across genres and purposes, and assessment of writing. For prospective teachers, grade 5 to community college level, pre-req: Teachin Comm Art/Lit major or instructor consent, no grad credit; credit will not be granted if already received for ENGL 5902

**ENGL 4909. Senior Portfolio.** (; 1 cr.; S-N or Audit; Every Fall & Spring)
Required portfolio and research project undertaken for senior seminar. pre-req: English major, senior, instructor consent

**ENGL 4922. Teaching Literature and Communication.** (4 cr. [max 5 cr.]; S-N only; Every Fall)
Theory and applications in teaching reading, writing, literature, speaking, listening and non-print media, grades 5 - 12. Synthesizes work in previous Teaching Communication Arts and Literature courses with special attention to reflective pedagogy, curriculum design, and the transition into the teaching profession. pre-req: Teaching Comm Art/Lit major or instructor consent, no grad credit; credit will not be granted if already received for ENGL 5922.

**ENGL 4931. Practicum in Teaching Literature.** (4 cr.; A-F or Audit; Every Fall & Spring)
Assisting in teaching a 1-, 2-, or 3-level literature course; experience preparing course materials; advising students in course; learning about the grading process; experience in lecturing and leading discussions; conferences with professor about teaching issues. pre-req: 3906, senior, 4 other upper division literature courses and instructor consent; no grad credit
Examines traditional kinds of children's literary texts, as well as literary and pedagogical theory, advertising, movies, and television to consider childhood as an historical, aesthetic and social construct in Western culture from the eighteenth century to the present. prereq: Junior or senior or grad student or instructor consent

ENGL 5495. Special Topics in Genre and Media Studies (various titles to be assigned). (4 cr.; [max 8 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Topics in genre and media studies that are not included in the regular curriculum.

ENGL 5533. Studies in English Literature Before 1800. (4 cr.; A-F or Audit; Periodic Fall & Spring) Intensive study of a theme, literary school or circle, literary genre in historical and cultural context. Topics vary. prereq: 6 credits literature

ENGL 5541. Restoration and 18th-Century Literature. (4 cr.; A-F or Audit; Periodic Fall & Spring) Study of controversies and cultural change evident in English literature, 1660-1800. Such authors as Dryden, Behn, Pope, Fielding, Johnson. prereq: 6 credits literature

ENGL 5561. English Romanticism. (4 cr.; A-F or Audit; Periodic Spring) The Romantic movement in England as reflected in the works of such writers as Wordsworth, Coleridge, Mary Shelley, Keats, Percy Shelley, and Anne Radcliffe. prereq: 6 credits literature

ENGL 5562. Victorian Literature. (4 cr.; A-F or Audit; Periodic Fall & Spring) Cultural and social concerns of Victorian England as reflected in the works of such writers as Tennyson, Arnold, Christina and D.G. Rossetti, Robert and Elizabeth Barrett Browning, and Samuel Butler. prereq: 6 credits literature

ENGL 5564. Studies in British Literature after 1900. (4 cr.; A-F or Audit; Periodic Fall & Spring) Advanced study of British literature written after 1900. Topic, genre, and historical focus vary according to instructor interest. prereq: none

ENGL 5572. American Renaissance. (4 cr.; A-F or Audit; Periodic Fall) American Romanticism and the flowering of American literature from early 19th century to the Civil War (authors and topics vary; e.g., Thoreau, Fuller, Hawthorne, Dickinson, Whitman). prereq: 6 credits literature

ENGL 5574. Studies in American Literature to 1914. (4 cr.; A-F or Audit; Every Fall & Spring) Study of selected North American authors after 1914. Literature studied will vary in relation to what kind of literary or cultural study instructor intends or what kind of critical approach to literature is used. prereq: 6 credits literature

ENGL 5575. Studies in American Literature after 1914. (4 cr.; A-F or Audit; Every Fall & Spring) Study of North American authors after 1914. Literature studied will vary in relation to what kind of literary or cultural study instructor intends or what kind of critical approach to literature is used. prereq: 6 credits literature

ENGL 5577. Major American Authors. (4 cr. [max 8 cr.]; A-F or Audit; Every Fall & Spring) Concentrated study in one to three authors, who are announced before course is offered. prereq: 6 credits literature

ENGL 5580. The Novel. (4 cr.; A-F or Audit; Periodic Fall & Spring) Explores the novel in its cultural, intellectual, and aesthetic contexts. Topics addressed may include issues of authorship, print culture and the literary marketplace, narrative style, and how what we think of as "the novel" has changed over time and in various parts of the world. Authors and topics vary. pre-req: Preferred 6 credits in ENGL or instructor consent

ENGL 5584. Mapping Postcolonial Literature. (4 cr.; A-F or Audit; Spring Odd Year) Interdisciplinary study of postcolonial literatures of Africa, Asia, and Latin America in their cultural and historical contexts. Critical examination of the postcolonial condition, including colonial constructions of knowledge and power and anti-colonial struggles against subordination. Exploration of key concepts, geography, history, theory, and future of postcolonial studies. prereq: minimum 6 credits of Literature

ENGL 5591. Independent Study. (1-5 cr.; Student Option; Every Fall, Spring & Summer) Students choose projects in consultation with their instructor. prereq: instructor consent, maximum 6 credits may be applied to grad program

ENGL 5595. Special Topics: (Various Titles to be Assigned). (1-5 cr. [max 10 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Topics not included in regular English curriculum. Topic and credits announced before course offered. prereq: Primarily for majors, minors, grad

ENGL 5611. Publishing the Middle Ages. (4 cr.; A-F or Audit; Periodic Fall) Study of the ways in which the middle ages were defined and canonized in print culture. Instruction on the processes of medieval manuscript production and editing, followed by analysis of rhetorical framework within which "medievalism" was constructed in the 19th century. prereq: Junior or senior or grad student or instructor consent

ENGL 5662. The Making of a Major Author: The Scholarly Edition in 17th- and 18th-Century England. (4 cr.; A-F or Audit; Periodic Fall & Spring) Study of the ways in which writers such as Shakespeare and Milton were transformed into "major authors" and "national poets" through the publication of scholarly editions of their works subsequent to their deaths. Textual analysis of the editions is combined with study of their publication histories, including the roles of editors and publishers who produced them. prereq: Junior or senior or grad student or instructor consent

ENGL 5663. Readers and the History of Books. (4 cr.; A-F or Audit; Periodic Fall) History of reading, primarily in the United States and England. Study of factors affecting literacy in late 18th through early 20th centuries, including technological advances, educational reform and changes in authorship and literature, prereq: Junior or senior or grad student or instructor consent

ENGL 5664. Small Presses, Little Magazines, and Modernism. (4 cr.; A-F or Audit; Periodic Spring) The founding and promotion of the modernist movement in little magazines and small presses. Publishing careers of significant modernists (e.g. Ford, Pound, Yeats, H.D. Eliot, Joyce). prereq: Junior or senior or grad student or instructor consent

ENGL 5665. The American Literary Marketplace. (4 cr.; A-F or Audit; Spring Odd Year) Study of the making, marketing, and selling of American literature. Close attention to history of American publishing industry, emergence of popular genres such as the romance and popular forms such as the dime novel, and material and technological changes in book production. prereq: Junior, senior or graduate student or instructor consent

ENGL 5802. English Language for Educators. (4 cr.; A-F or Audit; Every Fall) Application of linguistic and language learning theories to the teaching of communication arts, with emphasis on preparation of secondary school English teachers. Includes a focus on first and second language acquisition, approaches to language and grammar instruction, and the roles of language and dialect in culture and youth development. prereq: Graduate student; credit will not be granted if already received for LING 5802

ENGL 5821. History of the English Language. (4 cr.; A-F or Audit; Every Fall) History of sounds, word stock, and structures of English language from earliest records to present.

ENGL 5892. Teaching Language, Cognition, and Writing. (4 cr.; A-F only; Every Fall) Theory and practice of teaching composition. Includes cognitive theories of the composition process, teaching, and writing across genres and purposes, and assessment of writing. For prospective teachers, grade 5 to community college level. prereq: grad student or instructor consent; credit will not be granted if already received for ENGL 4902

ENGL 8094. Plan B Research (DRS). (1 cr. [max 3 cr.]; S-N only; Every Fall & Spring) Directed research to complete Plan B Project as required by the English MA program. prereq: instructor consent

ENGL 8171. Seminar in Pre-1800 British Literature. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Selected topics in the study of British literature written prior to 1800. prereq: Graduate Student

ENGL 8181. Seminar in British Literature, Late 18th - 20th Century. (1-4 cr.; A-F or Audit; Periodic Fall & Spring) Graduate seminar on selected topics in the study of British literature written from the late 18th century through the 20th century.

ENGL 8191. Seminar: American Literature. (1-4 cr.; A-F or Audit; Periodic Fall & Spring) Intensive study of selected authors and topics announced ahead of time; historical, cultural, and literary contexts; methodology; relevant scholarship and criticism.

ENGL 8333. FTE: Master’s. (1 cr.; No Grade Associated; Every Fall & Spring) (No description.) prereq: Master's student, adviser and DGS consent

ENGL 8444. FTE: Doctoral. (1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: doctoral student, adviser and DGS consent

ENGL 8888. Thesis Credits: Doctoral. (1-24 cr. [max 100 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: [max 18 credits per semester or summer]; 24 credits required

ENGL 8906. Introduction to Critical Theory. (1 cr.; A-F or Audit; Every Fall) Core course required for all English M.A. (Plan B) students. Seminar in critical theory and methods of literary research. prereq: Grad Student

ENGL 8931. Practicum in Teaching Literature. (1-4 cr.; A-F or Audit; Every Fall & Spring) Teaching in sophomore literature courses; experience preparing supplementary materials, consulting with students, and assisting instructors in grading student work. prereq: 8 credit grad-level literature or instructor consent

Environment and Sustainability (ES)

ES 1001. Introductory Seminar. (2 cr.; A-F only; Every Fall) Introduction to the complexities of multidisciplinary environmental issues through research and literature review with emphasis on development of critical thinking skills.

ES 2005. Environment and Sustainability. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall) This course will cover human impacts on their natural environments (resource depletion and pollution) and the complex notion of Sustainable Development. Students will analyze resource depletion (i.e., fossil fuels, forests, fisheries, water and soil) and pollution (i.e., climate change, ocean acidification, and oceanic garbage patches and dead zones) trends over the past century to better understand our growing impacts on the natural environment. Students will also analyze a wide variety of solutions (i.e., local food systems, renewable energy systems and water systems) from the emerging field of Sustainable Development aimed at mitigating these alarming resources depletion and pollution trends. Finally, students will be introduced to policy considerations regarding the implementation of these solutions and new economic approaches to help transition from economic growth to Sustainable Development.

ES 2005. Special Topics: (Various Titles to be assigned). (1-4 cr. [max 8 cr.]; Student Option: Periodic Fall, Spring & Summer) Special topics in Environment and Sustainability

ES 2803. Issues in Global Ecology. (SUSTAIN; 3 cr.; A-F only; Every Spring) An examination of our most pressing global environmental problems and their most promising solutions.

ES 3100. Sustainable Food Systems. (SUSTAIN; 3 cr.; A-F only; Every Fall) Historical and contemporary food systems within sustainability framework. Understands food within social, political, economic and environmental contexts. Looks at sustainable production, consumption and processing issues.

ES 3200. Environmental and Ecological Justice. (3 cr.; A-F or Audit; Every Fall) Integrated study of justice issues as it relates to both the distribution of pollution and related negative impacts of contemporary society and of the natural world and non-human life. Emphasis on identifying how fairness is imagined, debated, determined via structure and/or legislated.

ES 3500. Ecological Economics. (3 cr.; A-F only; Every Fall) Examine the basic principles and assumptions of Micro and Macro Economics, and their relevance in our modern global economic system. Examine the environmental/social consequences of deviations from these assumptions, and alternative economic models/analyses and policies consistent with sustainable development. prereq: ES major or minor or URS major and [Econ 1022 or Econ 1023] or instructor consent

ES 4005. Environmental Policy. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course explores the creation and implementation of environmental policy in the United States. Major environmental policies and laws at the federal and state level. Particular attention will be paid to air and water pollution, climate change, and natural resource use, pre-req: minimum 60 credits or instructor consent; no grad credit

ES 4010. Seminar. (4 cr.; A-F only; Every Spring) Compare and contrast global free market capitalism and democratic socialism. Identify political and economic barriers to achieving the goal of sustainable development. Examine the recent history of the move towards global free market capitalism around the world and its implications for sustainable development. Develop sustainable development projects and write proposals to targeted funders. prereq: ES major or minor, 90 credits; credit will not be granted if already received for 5001

ES 4090. Internship Preparation. (1 cr.; S-N only; Every Spring) Various employers and members of environmental organizations in the Duluth region, and in Minnesota will speak to the class each week to describe what they do in their perspective fields of environment and sustainability. Students will research careers in environmental work, producing reports on prominent fields and directions in environmental work. Students will be placed with perspective internship experiences at the end of the semester. prereq: ES major, credit will not be granted if already received for 5040

ES 4091. Independent Study. (1-3 cr.; A-F only; Every Fall, Spring & Summer) Directed readings and projects for students who wish to do independent advanced study or work on topics not normally covered in other courses. prereq: 60 credits, instructor consent; no grad credit; credit will not be granted if already received for ES 4001

ES 4097. Internship. (3 cr.; S-N only; Every Fall, Spring & Summer) Practical experience in some field of environmental work, under direction of a faculty adviser and a work-site adviser. prereq: 4090 or 5040, ES major, instructor consent, no grad credit; credit will not be granted if already received for 5050

ES 4612. Field Techniques and Research Design. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course is an introduction to qualitative research methods in environmental sustainability, and is designed to equip students to plan, analyze, and present original research. Students will follow the complete research design process, including funding and grant proposals internal review board applications, and how to use these leverage employment and graduate school applications. Specifically, students will learn to collect data through interviews, focus groups, textual analysis, and participant observation; how to analyze data through these techniques; and how to prepare sound scientific arguments based on these analyses. Based on the collection of data throughout the semester students will produce original research that will be presented to the public. no grad credit

ES 4910. Teaching Assistantship in Environment and Sustainability. (1-4 cr. [max 8 cr.]; S-N only; Periodic Fall & Summer) Practical experience in teaching beginning courses in the department. Students serve as intern teachers assisting the instructor in administration of the course. pre-req: instructor consent, no grad credit

ES 4999. Honors Project in Environment and Sustainability. (1-4 cr.; A-F only; Periodic Fall, Spring & Summer) Advanced individual project in any area of Environment and Sustainability demonstrating sound theoretical and research foundations.
Environmental Education (ENED)

ENED 1000. Introduction to Environmental and Outdoor Education. (4 cr.; A-F or Audit; Every Fall & Spring) Overview of outdoor education, including outdoor recreation, environmental education and adventure education, will be explored. The structure and role of outdoor education in contemporary society will be considered. prereq: Credit will not be granted if already received for REC 1000

ENED 1201. Outdoor Skills I. (2 cr.; A-F or Audit; Every Fall) Instruction and practice in skills of fall outdoor activities. Camping, canoeing, hunting, and climbing; equipment, shelters, and navigation. prereq: credit will not be granted if already received for REC 1202

ENED 1202. Outdoor Skills II. (2 cr.; A-F or Audit; Every Spring) Instruction and practice in skills of winter and spring outdoor activities. Camping, backpacking, dogsledding, and fishing; equipment and navigation. prereq: credit will not be granted if already received for REC 1203

ENED 1203. Outdoor Skills I. (2 cr.; A-F or Audit; Every Fall) Instruction and practice in skills of fall outdoor activities. Camping, canoeing, fishing, hunting; equipment, shelters, and navigation. prereq: Environmental and Outdoor Ed major or minor; credit will not be granted if already received for REC 1203

ENED 1204. Outdoor Skills II. (2 cr.; A-F or Audit; Every Spring) Instruction and practice in skills of winter and spring outdoor activities. Camping, backpacking, dogsledding, and fishing; equipment and navigation. prereq: Environmental and outdoor educ major or minor; credit will not be granted if already received for REC 1204

ENED 2000. Technology in Outdoor Education. (3 cr.; A-F or Audit; Every Fall) The use of technology to conduct and manage outdoor and environmental education programs. Includes basic computer hardware and software selection related to technology such as GPS, interpretation, and trail cameras guiding outdoor education and management. prereq: Environmental and Outdoor Education major or instructor consent

ENED 2300. Teaching and Learning. (3 cr.; A-F or Audit; Every Spring) Learning in the outdoor context is explored via presentation and active consideration of philosophical and theoretical foundations of environmental and outdoor education. Teaching skills for the environmental and outdoor non-formal educational context are presented and developed; for example, instruction in basic educational methodology and accompanying field-teaching experiences is provided. Outdoor classroom management including basic risk management, student behavior management, lesson planning and use of the outdoor classroom are presented and explored. prereq: ENED 1000; credit will not be granted if already received for REC 2300

ENED 3309. Outdoor Leadership. (1 cr.; S-N or Audit; Every Spring) Theories of leadership practices commonly used in outdoor education settings. Includes group development stages and techniques of group management. Concludes with preparation for 9-day field experience (EnEd 3310). This course MUST be taken in conjunction with EnEd 3310. prereq: EnEd 2300

ENED 3310. Outdoor Leadership Field Experience. (2 cr.; A-F or Audit; Every Summer) Practice, theory, and methods involved in leadership development including a detailed analysis of the qualities and roles of leaders in outdoor educational settings. recreation settings. This course will occur as a 9-day field experience. prereq: ENED 3309

ENED 3327. Large Event Management. (3 cr.; A-F or Audit; Every Spring) Organization and administration of life fitness activities and informal instruction in recreational sport programs. Design, implementation, and evaluation of large-scale recreational sports events such as triathlons and tournaments. prereq: ENED 2300 or instructor consent; credit will not be granted if already received for REC 3327

ENED 3330. Outdoor Recreation. (3 cr.; A-F or Audit; Every Fall) Examination of outdoor recreation as a part of natural resource-based agencies as well as in nature centers, commercial operations, and in municipal settings. This course will focus on outdoor recreation uses in northeastern Minnesota. prereq: ENED 2300 or instructor consent; credit will not be granted if already received for REC 3330

ENED 3331. Field Interpretive Techniques I. (3 cr.; A-F or Audit; Every Fall) Techniques and methods used to interpret natural history of autumn and early winter environments. Emphasizes geomorphology, tree identification, and basic raptor ecology. Primarily field based at sites throughout northeastern Minnesota. prereq: credit will not be granted if already received for REC 3341

ENED 3342. Field Interpretive Techniques II. (3 cr.; A-F or Audit; Every Spring) Techniques and methods used to interpret natural history of winter and spring environments. Ecology of winter, vernal ponds, spring wildflowers, biomes, and migratory birds. Primarily field based at sites throughout northeastern Minnesota. prereq: credit will not be granted if already received for RecEd 3342

ENED 3400. Program Development and Evaluation in Environmental and Outdoor Education. (3 cr.; A-F or Audit; Every Spring) This course provides an introduction to the techniques of program development and evaluation in the context of outdoor and environmental education. It is designed for those who will be working in these fields to gain skills in developing a program and conducting evaluations of program outcomes, as well as in accessing, understanding, and using existing evaluations to guide practice. The focus of this course is at a program-level, as opposed to assessing learning/outcomes at a lesson-level. prereq: ENED 2300

ENED 4163. Outdoor Education Methods. (3 cr.; A-F or Audit; Every Fall) Methods and theoretical basis for teaching outdoor education. Emphasis on application at outdoor sites. Weekend experience at a regional nature center required. prereq: ENED 3442 or instructor consent; credit will not be granted if already received for EDUC 4183

ENED 4300. GIS Management for Recreation. (3 cr.; A-F or Audit; Every Fall) The principles and practices of therapeutic outdoor education in a variety of contexts, including: wilderness therapy, residential treatment, correctional facilities, and community programs will be examined. The history, philosophy, and methodological approaches will provide a basis for learning current trends, program models, and research in the field. Professional competencies and standards related to the field will also be addressed. prereq: Minimum 30 credits, no grad credit

ENED 4315. Operations and Management. (4 cr.; A-F or Audit; Every Fall) Methods and practice of administrative processes of personnel, fiscal, and facility management. Field study and presentation of a management plan. prereq: ENED 2300 or instructor consent

ENED 4320. GIS Management for Recreation Professionals. (3 cr.; Student Option; Every Spring) Using G.I.S. mapping techniques for recreation and outdoor education professionals in resource management decisions. Arcview and Landview software will be used to visualize and analyze landscapes. This course is specific to recreation and/or outdoor education professionals. prereq: No grad credit; credit will not be granted if already received for REC 4320

ENED 4410. Ropes Course Management. (3 cr.; A-F or Audit; Every Fall) Management of a ropes course as a part of an outdoor education facility. Includes ropes course elements, instructional techniques, group debriefing skills, site inspection, safety, recommend and equipment maintenance. This course will follow industry standards such as Project Adventure. prereq: ENED 3300 or instructor consent, no Grad credit; credit will not be granted if already received for Rec 4410

ENED 4555. Foundations of Environmental Education. (3 cr.; A-F or Audit; Every Spring) Provides a background of skills and understanding of environmental education

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
ENED 4800. North Karelia: Outdoor Education and National Parks of Eastern Finland. (GLOBAL PER; 3 cr.; A-F or Audit; Every Summer)
This is a Study Abroad Program in the country of Finland in the Karelia region. Karelia is a magnificent area of lakes and forests in Eastern Finland. You will learn how outdoor education is used to teach about the protected natural areas in the Karelia district, particularly Finnish Wilderness Areas. You will learn basic natural history such as plants, trees, birds, and wildlife. You will explore how the Finnish “Everyman’s Right” applies to sustainable use and management of Protected Nature Areas. From your experiences in Finland you will compare cross-cultural nature experiences in Finnish and U.S. protected areas, particularly those in Minnesota such as the Boundary Waters Canoe Area Wilderness (BWCAW), which is very similar to the Finnish Karelia Region. pre-req: minimum GPA 2.5, minimum 30 credits

ENED 4991. Independent Study. (1-4 cr. [max 16 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Independent project that would serve to further the student's knowledge base and/or professional competencies. prereq: instructor consent; no grad credit

ENED 4992. Readings in Recreation. (1-4 cr. [max 16 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Complementary readings and discussion in student's area of interest with faculty supervision. prereq: instructor consent; no grad credit

ENED 4996. Outdoor Education Internship. (12 cr.; S-N or Audit; Every Fall, Spring & Summer)
Supervised field experience in outdoor education. prereq: Environmental and Outdoor education major, instructor consent; no grad credit; credit will not be granted if already received for Rec 4996

ENED 4997. Recreation Practicum. (3 cr.; S-N only; Every Fall, Spring & Summer)
Field-based experience through a selected recreation agency. prereq: ENED 4163, PETE 3508 and instructor consent; no grad credit; will not be granted if already received for REC 4997

ENED 5100. Research Design and Methods in the Social Sciences. (3 cr.; A-F or Audit; Every Fall)
An overview of the designs, methods, and processes used in social science research. Course content includes the following topics: Developing a purpose statement and research questions; conceptualization, operationalization, and measurements of variables’ choosing and using human research subject; experimental research’ survey research prereq: graduate student or instructor consent

ENED 5163. Outdoor Education Methods. (3 cr.; A-F or Audit; Every Fall)
Methods and theoretical basis for teaching outdoor education. Emphasis on application at outdoor sites. Weekend experience at a regional nature center required prereq: MEd candidate or instructor consent

ENED 5164. Environmental Education In-Service Training. (0.5-10 cr.; A-F or Audit; Periodic Fall)
Environmental education methods, materials, and curricula for educators wishing to enhance their environmental education training. prereq: instructor consent; credit will not be granted if already received for Educ 5164

ENED 5165. Theories and Models in Outdoor Education. (2 cr.; A-F or Audit; Every Fall)
Overview of theoretical foundations of outdoor education. Definitions of terms related to outdoor education, historical antecedents, future adventure education, social and psychological benefits of outdoor education. prereq: instructor consent; credit will not be granted if already received for Educ 5165

ENED 5325. Sustainability Issues Investigation. (2 cr.; A-F or Audit; Every Spring)
The study of resolving environmental problems that affect sustainability. This includes issue identification; building an effective team of investigators; and, study of the issue to the point of making recommendations to resolve the issue of sustainability management and education.

ENED 5343. Advanced Field Interpretive Techniques. (3 cr.; A-F or Audit; Every Summer)
Techniques and methods used to interpret the natural and cultural history of unique field sites; For example, Isle Royale National Park. Specific, in-depth topics of natural and cultural history will be emphasized. Techniques for field site investigation and field based interpretation as an educational approach will be investigated. prereq: ENED 3341 or ENED 3342 or instructor consent

ENED 5560. Current Research and Issues. (3 cr.; A-F or Audit; Every Spring)
Examines research literature and related issues pertaining to outdoor education including disciplines of science, environmental experiential, and adventure education. Trends in research, teaching, plus research design and methods. prereq: grad student or instructor consent

ENED 5625. Program Development and Evaluation. (3 cr.; A-F or Audit; Every Spring)
A comprehensive approach to program development will be applied to youth-based environmental education programs. Course is designed for those working in supervisory capacities to gain skills in designing, implementing, and evaluating environmental education programs.

ENED 5800. Sustainability Education: Methods and Strategies. (3 cr.; A-F or Audit; Every Summer)
Methods and lesson strategies connected to current definitions, theories, and practices of teaching sustainability practices and management. Sustainability of the natural environment from the effects of outdoor education and nature-based tourism is an underestimated aspect of sustainability practices. Pedagogical approaches to teach sustainable practices for the natural environment will be the primary focus of this course. Students will be able to apply this course to other sustainability practices such as sustainable energy or food practices. prereq: Minimum 60 credits or Environmental Education Certificate or Graduate student or instructor consent

ENED 5850. Classroom Applications. (2 cr.; A-F or Audit; Every Fall)
Understanding the formal classroom environment: scope and sequence, management, assessment, and standards for applications pertinent to audience and setting in environmental education. prereq: MEd candidate or instructor consent

ENED 5855. Programming for School Systems. (3 cr.; A-F or Audit; Every Spring)
The relationship between environmental education and the formal school system (P-12) will be examined. Instructional approaches that use the environment as a context for helping students develop essential content and skills in the core academic disciplines will be emphasized. prereq: 5850, Educ 5850 or instructor consent

ENED 5990. Research Project. (1-6 cr.; S-N only; Every Fall, Spring & Summer)
Faculty-supervised research project required for MEd prereq: Instructor consent

ENED 5991. Independent Study. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Directed independent study or projects in a particular area of interest. Approved degree program plan should be completed before course is taken by graduate students. prereq:
Electrochemical conversion, fuel cells, pumping efficiency, wind energy, conversion of wave energy, heat pumps, ecosystems and biomass energy, and energy transmission and storage. prereq: Phys 2012 or 2015 and 2016

ESCI 3201. Mineral Resources. (3 cr.; A-F or Audit; Every Fall)
An introduction to the geology, extraction, processing, and disposal of mineral deposits, including major metal deposits (Fe, Al, Pb, Zn, Cu), scarce metals (high-technology metals, rare earth metals), non-metal deposits (salt, fertilizer, chemicals) as well as industrial minerals and resources (stone, sand/clay). Also, includes topics related to the environmental footprint of resource mining and the impact of technological and societal development. prereq: MATH 1290 or 1296 or 1596 and PHYS 1001 or 2013 or 2017 or instructor consent

ESCI 3202. Energy Resources. (3 cr.; A-F or Audit; Every Spring)
Geologic principles of carbon-based energy resources, with emphasis on coal and conventional and unconventional (e.g. shale oil, oil-sands, ultra-heavy crude oil) petroleum and gas; fundamentals of nuclear energy; introduction to technologies associated with the extraction, production, refinement, consumption, and byproduct treatment/disposal of carbon-based and nuclear-energy resources; importance of carbon-based energy in global industrialization and associated population growth; limits of population growth imposed by energy requirements; principles and associated technologies of renewable energy and energy conversion, with focus on solar (direct and indirect), geothermal, tidal, and biofuel energy resources. prereq: MATH 1290 or 1296 or 1596 and PHYS 1001 or 2013 or 2017 or instructor consent

ESCI 3291. Independent Study. (1-3 cr.; S-N only; Every Fall)
Directed, student motivated, study arranged and guided by a faculty member. prereq: instructor consent; no grad credit

ESCI 3296. Internship in Environmental Science. (1-2 cr. [max 4 cr.;] S-N only; Every Fall & Summer)
Practical work experience with an employer closely associated with the student's academic area. Arranged by mutual agreement between student, department, and employer. Written report and assessment by non-academic supervisor at the end of the work experience. prereq: Environmental Science major and instructor consent

ESCI 4012. Environmental Assessment. (3 cr.; A-F or Audit; Every Spring)
Environmental issues identification and investigation. Review of case studies of environmental investigations and the components of environmental impact statements. Selection of local or regional environmental issues and evaluation of the environmental problems from a multidisciplinary perspective. Preparation of draft Environmental Impact Statement (EIS). prereq: instructor consent; no grad credit

ESCI 4201. Introduction to Watershed Hydrology. (3 cr.; A-F or Audit; Every Spring)
This course provides an introduction to the hydrologic cycle and water processes in the context of wildland watersheds. The course will cover the major components of the hydrologic cycle, including precipitation, canopy interception, evapotranspiration, infiltration, soil water storage, runoff, streamflow, and groundwater flow. The impacts of watershed management on water quantity and quality will be discussed using regional, national, and global examples, with emphasis on solving real-world problems using hydrologic datasets. pre-req: CHEM 1153 or 1173, MATH 1290 or MATH 1296, minimum 60 credits

ESCI 4863. Ecosystems Ecology and Biogeochemistry. (3 cr.; A-F or Audit; Every Spring)
Ecosystems ecology is the integrated study of the flows of materials and energy through ecosystems, which includes both the living (biotic) and non-living (abiotic) components. Biogeochemistry is a major subfield of ecosystems ecology, and deals with the cycling of nutrients through ecosystems. In this class, we will discuss the integration of ecosystems and biogeochemistry in terrestrial environments, specifically focusing on how human activities influence ecological systems and vice versa. It is my hope that you walk away from this course with a better understanding of how large environmental issues such as climate change and invasive species affect ecological systems. pre-req: BIOL 2801 or instructor consent; no grad credit

ESCI 5201. Introduction to Watershed Hydrology. (3 cr.; A-F or Audit; Every Spring)
This course provides an introduction to the hydrologic cycle and water processes in the context of wildland watersheds. The course will cover the major components of the hydrologic cycle, including precipitation, canopy interception, evapotranspiration, infiltration, soil water storage, runoff, streamflow, and groundwater flow. The impacts of watershed management on water quantity and quality will be discussed using regional, national, and global examples, with an emphasis on solving real-world problems using hydrologic datasets. pre-req: CHEM 1153, MATH 1290 or 1296 or grad student

ESCI 5863. Ecosystems Ecology and Biogeochemistry. (3 cr.; A-F or Audit; Every Spring)
Ecosystems ecology is the integrated study of the flows of materials and energy through ecosystems, which includes both the living (biotic) and non-living (abiotic) components. Biogeochemistry is a major subfield of ecosystems ecology, and deals with the cycling of nutrients through ecosystems. In this class, we will discuss the integration of ecosystems and biogeochemistry in terrestrial environments, specifically focusing on how human activities influence ecological systems and vice versa. It is my hope that you walk away from this course with a better understanding of how large environmental issues such as climate change and invasive
species affect ecological systems; pre-req: BIOL 2801 or instructor consent

**Exercise Science (EXSC)**

**EXSC 3200. Motor Learning and Development.** (4 cr.; A-F or Audit; Every Fall & Spring) Principles and practices that affect the learning and performing of motor skills; theories of motor learning; professional applications of the motor learning in exercise science, physical therapy, athletic training, and physical education. pre-req: Minimum 60 credits, Athletic training or Exercise Science or Physical Education major or instructor consent

**EXSC 3300. Human Biomechanics.** (4 cr.; A-F or Audit; Every Fall & Spring) Application of physical laws to human movement. Laws of mechanics and tissue biomechanics concepts are applied to human motor function. (3 hr lect, 1 hr lab) pre-req: HLTH 2030, PHYS 1001, minimum 60 credits, Exercise Science major or instructor consent

**EXSC 3400. Exercise Physiology.** (4 cr.; A-F or Audit; Every Fall & Spring) Physiological responses and adaptations to acute and chronic exercise. (3 hrs lect, 1.25 hrs lab) pre-req: HLTH 2040 or PHSL 3011, minimum 60 credits, Exercise Science major, or instructor consent

**EXSC 3410. Performance Nutrition and Weight Management.** (4 cr.; A-F or Audit; Every Fall & Spring) A study of the principles of sports nutrition with emphasis on the effects of diet on body composition, metabolic processes, physiological function, and physical performance. pre-req: HLTH 1470, minimum 60 credits, Athletic Training or Exercise Science major or instructor consent

**EXSC 3420. Exercise Testing and Prescription.** (4 cr.; A-F or Audit; Every Fall & Spring) Physical fitness programming for adults: principles of exercise testing and prescription. pre-req: 3400, Exercise Science major or instructor consent

**EXSC 3430. Principles of Strength and Conditioning Programs.** (4 cr.; A-F or Audit; Every Fall & Spring) Theory and practice of developing and implementing strength training and conditioning programs; emphasis on technique analysis and instructional methods. pre-req: 3400, Exercise Science major or instructor consent

**EXSC 3440. Clinical Exercise Physiology.** (5 cr.; A-F or Audit; Every Fall & Spring) Examination of the use of physiological principles and relationships in clinical situations where exercise is used for prevention or alleviation of disease. pre-req: 3420, Exercise Science major or instructor consent

**EXSC 4590. Research in Athletic Training.** (3 cr.; A-F or Audit; Every Fall) Interpretation of statistical procedures and research designs commonly used in athletic training research. Prepares students to conduct research projects related to the field of athletic training. pre-req: 3610 and 3698; no grad credit

**EXSC 4600. Senior Seminar Athletic Training.** (2 cr.; A-F or Audit; Every Spring) A culminating course that includes a review of current trends in health care, preparation for the BOC examination, and a research project related to athletic training. pre-req: 4001, Athletic Training major, no grad credit; credit will not be granted if already received for PEP 5600

**EXSC 4610. Orthopedic Seminar.** (1 cr.; A-F or Audit; Every Fall & Spring) Provides athletic training students the opportunity to work with medical doctors in the evaluation of injuries sustained during physical activity, including an overview of diagnostic imaging techniques and their interpretation. pre-req: 3698; no grad credit

**EXSC 4646. Medical Aspects of Athletic Training.** (3 cr.; A-F or Audit; Every Fall) The recognition, evaluation, management, and treatment of non-orthopedic medical conditions that affect the physically active population. pre-req: 3642, 3698, Athletic Training major, no grad credit

**EXSC 4650. Administrative Aspects of Athletic Training.** (3 cr.; A-F or Audit; Every Fall) Managerial and organizational strategies for developing and directing athletic training services at the high school, collegiate, and clinical setting. Practical applications and case studies are emphasized. pre-req: 4001, Athletic Training major, no grad credit

**EXSC 4697. Clinical Experiences in Athletic Training V.** (2 cr.; A-F or Audit; Every Fall) Athletic training psychomotor skills are enhanced and assessed by an approved clinical instructor during the clinical rotation. Emphasis is on previously learned classroom material. 300 hours of clinical experience are required pre-req: 3697, Athletic Training major, no grad credit

**EXSC 4698. Clinical Experiences in Athletic Training VI.** (2 cr.; A-F or Audit; Every Spring) Athletic training psychomotor skills are enhanced and assessed by an approved clinical instructor during the clinical rotation. Emphasis is on previously learned classroom material. 300 hours of clinical experiences are required. pre-req: 4697, Athletic Training major, no grad credit

**EXSC 4700. Statistics and Research Methods in Exercise Science.** (4 cr.; A-F or Audit; Every Fall & Spring) Descriptive and inferential statistical procedures and research design in exercise science. Prepares students to conduct and analyze research projects in exercise science, biomechanics, motor learning, and/or the psychological factors that influence exercise. pre-req: 12 cr from 3200, 3300, 3400, 3410, Exercise Science major, no grad credit

**EXSC 4710. Applied and Experimental Exercise Science.** (4 cr.; A-F or Audit; Every Fall & Spring) Advanced study and research in exercise science; methods of quantifying exercise responses and adaptations; basic research design. pre-req: 3200, 3300, 3400, 3410, 4700, Exercise Science major or instructor consent; no grad credit

**EXSC 4996. Internship.** (3-12 cr.; S-N or Audit; Every Fall, Spring & Summer) Supervised field internship experience in hospital, fitness facility, or agency setting. Six credits required for Health Fitness concentration. Additional credits may be used as electives in this program. Forty clock hours experience are required per credit hour of registration. pre-req: 3420, Exercise Science major, instructor consent; no grad credit

**Family Medicine (FMED)**

**FMED 5591. Independent Study.** (0 cr.; No Grade Associated; Every Fall, Spring & Summer) Intensive, independent study project of student's interest in medical research, interdisciplinary fellowship, preceptorship in rural health care delivery, or another medical area approved by Department of Family Medicine. Reflective summary upon completion (paragraph). pre-req: department consent

**FMED 6441. Community Clinical Medicine.** (1 cr.; P-N only; Every Fall) Clinical practicum, hospital based, covering core material in family practice, internal medicine, obstetrics, pediatrics, surgery. Patient work-ups with discussion by preceptor. pre-req: Regis med student

**FMED 6442. Community Clinical Medicine.** (2 cr.; P-N only; Every Spring) Clinical practicum, hospital based, covering core material in family practice, internal medicine, obstetrics, pediatrics, surgery. Patient work-ups with discussion by preceptor. pre-req: Regis med student

**FMED 6462. Family Medicine Preceptorship.** (3 cr.; P-N or Audit; Every Fall) Students spend periods of time with a physician in family practice in rural/small communities of Minnesota and Wisconsin observing methods by which health care is delivered. pre-req: Regis med student

**FMED 6501. Clinical Pathology Conferences I.** (1 cr.; P-N or Audit; Every Spring) Applying knowledge gained in pathology and laboratory medicine to an unknown clinical case in order to work through a differential diagnosis. pre-req: Regis med student

**FMED 6597. Medical Education for Diversity and Service.** (1 cr.; P-N only; Every Fall) Students will explore key topics in global health. Topics include health risks; determinants of health; environment and
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FIN 4617. Management of Financial Institutions. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Techniques for managing commercial banks and other financial institutions through asset/liability management. pre-req: FMIS 3647 or FIN 3647, LSBE candidate or approved Finance minor with 60 credits or grad student or college consent; credit will not be granted if already received for FMIS 4617

FIN 4620. Portfolio Theory and Analysis. (3 cr.; A-F or Audit; Every Fall & Spring)
Portfolio management in a modern portfolio theory (MPT) framework. Risk measurements, risk-return relationships, and portfolio models are developed. Topics include Markowitz portfolio theory, risk-return models, bond portfolio management, evaluating portfolio performance, and outperforming the market. pre-req: Financial Markets major or minor; no grad credit; credit will not be granted if already received for FMIS 4620

FIN 4624. Applied Portfolio Management. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Gives students in the financial markets program "hands-on" learning experience by analyzing and managing a real-money investment fund. Students will be responsible for managing all aspects of the investment fund. pre-req: FMIS 4616 or FIN 4616, FMIS 4620 or FIN 4620, Financial Markets major or minor; no grad credit; credit will not be granted if already received for FMIS 4624

FIN 4644. Portfolio Management. (3 cr.; A-F or Audit; Every Spring)
Portfolio analysis in the mean-variance framework of Markowitz. Portfolio management strategies. The CAPM, APT, and other capital market theory implications. Portfolio performance evaluation. pre-req: FMIS 4644 or FIN 4644, LSBE candidate or Finance Minor; credit will not be granted if already received for FMIS 4644

FIN 4645. Financial Modeling and Valuation. (3 cr.; A-F or Audit; Every Fall)
The objective of this course is to introduce students to financial modeling in Microsoft Excel. In particular, the course will focus on exploring the techniques and tools used to by industry professionals to produce valuations for businesses. The course will first explore commonly-used valuation approaches such as dividend discount models, discounted cash flow analysis, and valuation-by-comparables and then use these models to value publicly-traded companies and situations such as initial public offering or a corporate merger. pre-req: MBA student or instructor consent

FIN 4651. Derivative Securities. (3 cr.; A-F or Audit; Every Fall & Spring)
Nature and functions of derivative security markets such as options, futures, options on futures, swaps, and financial engineering. Emphasizes their use as tools for risk reduction, portfolio management, and speculative medium for aggressive investor. pre-req: MBA student or department consent

FIN 5616. Security Analysis. (3 cr.; A-F or Audit; Every Fall)
Introduction to theory, concepts, and practices of security analysis and investment practices. Common stock, fixed income securities, derivative securities, and mutual funds will be analyzed. Other topics include sector analysis, financial statement analysis, ratio analysis, diversification, and hedging. pre-req: MBA student or instructor consent

FIN 5617. Management of Financial Institutions. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Techniques for managing commercial banks and other financial institutions through asset/liability management. pre-req: MBA student or instructor consent

FIN 5620. Portfolio Theory and Analysis. (3 cr.; A-F or Audit; Every Fall & Spring)
Portfolio management in a modern portfolio theory (MPT) framework. Risk measurements, risk-return relationships, and portfolio models are developed. Topics include Markowitz portfolio theory, risk-return models, bond portfolio management, evaluating portfolio performance, and outperforming the market. pre-req: MBA student or instructor consent

FIN 5624. Applied Portfolio Management. (3 cr.; A-F or Audit; Every Fall)
Gives students in the financial markets program "hands-on" learning experience by analyzing and managing a real-money investment fund. Students will be responsible for managing all aspects of the investment fund pre-req: MBA student or instructor consent

FIN 5644. Portfolio Management. (3 cr.; A-F or Audit; Every Spring)
Portfolio analysis in the mean-variance framework of Markowitz. Portfolio management strategies. The CAPM, APT, and other capital market theory implications. Portfolio performance evaluation. pre-req: MBA student or instructor consent

FIN 5645. Financial Modeling and Valuation. (3 cr.; A-F or Audit; Every Fall)
The objective of this course is to introduce students to financial modeling in Microsoft Excel. In particular, the course will focus on exploring the techniques and tools used to by industry professionals to produce valuations for businesses. The course will first explore commonly-used valuation approaches such as dividend discount models, discounted cash flow analysis, and valuation-by-comparables and then use these models to value publicly-traded companies and situations such as initial public offering or a corporate merger. pre-req: MBA student or instructor consent

FIN 5646. Financial Plan Development. (3 cr.; A-F or Audit; Every Spring)
Financial planning is the process of managing resources to achieve personal financial goals. It involves the steps of determining current financial situations, developing financial goals, identifying alternative courses of actions, evaluation alternatives, creating financial action plans, and finally evaluating and revising plans. This course provides the systematic framework for implementing these activities. pre-req: FMIS 3601 or FIN 3601, FIN 3644 or FIN 3644, FMIS 3655, ACCT 2001 and FIN 3612 or FIN 3612 and 4600, BLAW 3301 (can be taken concurrently); no grad credit; credit will not be granted if already received for FMIS 4646

Courseos listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST 1002. Art 1002, Introduction to Art.</td>
<td>(1-20 cr.; Student Option; Every Fall)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1003. Art 1009, Fundamentals of Drawing.</td>
<td>(1-20 cr.; Student Option; Every Fall)</td>
<td>Study Abroad course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1004. Art 1405, Fundamentals of Ceramics.</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1005. Art 1605, Fundamentals of Photography.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FST 1006. DN 1101, Modern Dance Technique I.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FST 1007. DN 1111, Jazz Dance Technique I.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1008. DN 1131, Ballet Technique I.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1009. Mu 1501, Concert Band.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FST 1010. Mu 1502, Symphonic Wind Ensemble.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 1011. Mu 1503, Symphony Orchestra.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 1012. Mu 1504, Chamber Orchestra.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1013. Mu 1505, Jazz Ensemble.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1014. Mu 1510, Concert Chorale.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1015. Mu 1511, University Singers.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1016. Mu 1512, Chamber Singers.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1017. Mu 1513, Vocal Jazz Ensemble.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1018. Th 1099, Production Practicum I.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1019. Th 1111, Acting Fundamentals I.</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study Abroad course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1020. Th 1199, Performance Practicum I.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 1021. Art 1005, Freshman Seminar: Introduction to Art.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program. Required consent from the International Education Office.</td>
</tr>
</tbody>
</table>

**Foreign Studies (FORS)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FORS 1100. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 1101. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 1102. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 1103. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 1104. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 1105. International Education.</td>
<td>(1-20 cr.; Student Option; Periodic Fall, Spring &amp; Summer)</td>
<td>Study abroad course prerequisite: Admitted to an approved study abroad program requires consent from the International Education Office.</td>
</tr>
</tbody>
</table>

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Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Foreign Studies (FST)

FST 1110. Study in Australia. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1115. International Exchange Programs. (1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1120. Study Abroad: Non-affiliate program. (; 0 cr. [max 40 cr.]; Student Option; Every Fall, Spring & Summer)
This course represents academic credit pursued through a Study Abroad program which is not affiliated with the University of Minnesota. Neither the quality of the program nor academic credit may have been reviewed to meet UMD academic standards. Transfer of academic credit is not guaranteed. UMD is not responsible for the safety or quality of non-affiliated study abroad programs. Enrolled students are responsible for working with the non-affiliate provider directly, in addition to UMD Study Abroad office. prerequisite: This course represents academic credit pursued at locations external to the University of Minnesota through the UMD Study Abroad Program or its affiliated programs. UMD Study Abroad programs and related coursework provide students the opportunity to increase their knowledge, cognitive complexity, self-realization, relational interdependence, humanitarianship, and build new life skills. Through Study Abroad programs students will prepare for their roles and responsibilities as global citizens. Visit the UMD Study Abroad office for more information about programs, guidance, and support. prerequisite: Reserved for participants in Study Abroad program(s). Students require approval from the Study Abroad office to drop this course. Please contact your study abroad coordinator, http://www.d.umn.edu/study-abroad/

FST 1125. UMD Exchange in Mauritius. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1130. UMD Study in Sweden. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1135. UMD Exchange in Western Australia. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1140. Study in New Zealand. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1145. UMD Exchange Program in England. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1190. Writ 1120, College Writing. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1200. Educ 1111, Dev Crit Thinking. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1201. Geog 2552, Introduction to Maps & Cartographic Methods. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1202. Ling 1811, Introduction to Language. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1203. Math 1024, Introduction to Contemporary Mathematics. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1204. Math 1160, Finite Mathematics and Introduction Calculus. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1205. Math 1250, Precalculus Analysis. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1206. Math 1290, Calculus for Natural Sciences. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1207. Math 1296, Calculus I. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1208. Phil 1001, Problems of Philosophy. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1209. Phil 1008, Critical Thinking. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1210. Phil 1018, Logic. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1211. Stat 1411, Introduction to Statistics. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1212. Stat 2411, Statistical Methods. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1300. Amln 1103, Beginning Chippewa I. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1301. Amln 1104, Beginning Chippewa II. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 1302. Amin 2203, Intermediate
Chippewa I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1303. Amin 2204, Intermediate
Chippewa II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1304. Comm 1000, Human Communication Theory. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1305. Comm 1112, Public Speaking. (1-20 cr.; Student Option; Every Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1306. Comm 1222, Interpersonal Communication. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1307. CSD 1100, Phonetics. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1308. ASL 2001, American Sign Language Studies I. (1-20 cr.; Student Option; Fall, 2018)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1309. ASL 2002, American Sign Language II. (1-20 cr.; Student Option; Fall, 2018)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1310. CS 1011, Introduction to Computers and Software. (1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1312. CS 1121, Introduction to Programming Visual BASIC. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1313. CS 1131, Introduction to Programming in FORTRAN. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1314. CS 1135, Introduction to Programming in FORTRAN 77. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1315. CS 1211, Introduction to Programming in C. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1316. CS 1511, Computer Science I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1317. CS 1581, Honors: Computer Science I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1318. CS 2121, Introduction to Programming in Java. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1319. Fr 1101, Beginning French I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1320. Fr 1102, Beginning French II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1321. Fr 1201, Intermediate French I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1322. Fr 1202, Intermediate French II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1323. Fr 2301, Advanced French. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1324. Ger 1101, Beginning German I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1325. Ger 1102, Beginning German II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1326. Ger 1201, Intermediate German I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1327. Ger 1202, Intermediate German II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1328. Ger 2301, Advanced German. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1329. Lang 1101, Beginning Foreign Language I. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1330. Lang 1102, Beginning Foreign Language II. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1331. Lang 1201, Intermediate Foreign Language I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1332. Lang 1202, Intermediate Foreign Language II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 1333. Phil 2011, Philosophy of Language. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Foreign Studies (FORS)

FORS 1504. MU 1504 Cross-Cultural Performance Experience in Panama. (1-4 cr.; Student Option; Periodic Spring) Study Abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 1505. Geol 1120, Life and Death of the Dinosaurs. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 1507. Geol 2610, Oceanography. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 1508. Hlth 1470, Human Nutrition. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 1509. Phys 1011, Ideas in Physics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 1510. Ast 1051, Freshman Seminar: New Solar System. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FORS 1511. Geol 1042, Natural Disasters and Civilization. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FORS 1512. Geol 1610, Oceanography. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FST)

FST 1504. Chem 1102, Aspects of Chemistry. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1505. Geol 1120, Life and Death of the Dinosaurs. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1507. Geol 2610, Oceanography. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1508. Hlth 1470, Human Nutrition. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1509. Phys 1011, Ideas in Physics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1510. Ast 1051, Freshman Seminar: New Solar System. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1511. Geol 1042, Natural Disasters and Civilization. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1512. Geol 1610, Oceanography. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1513. Geol 2320, Legends of the Flood. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1514. Geol 2350**, Earth Resources. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1515. ES 2803, Issues in Global Ecology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1516. Anth 1604, Cultural Anthropology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1600. Anth 1604, Cultural Anthropology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1601. Anth 1612, Introduction to Archaeology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1602. Comm 2929, Intercultural Communication. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1603. Econ 1022, Principles of Economics: Macro. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1604. Econ 1023, Principles of Economics: Micro. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1605. Geog 1304, Human Geography. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1606. Geog 2313, Economic Geography. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1607. Pol 1011, American Government and Politics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1608. Pol 1500, Introduction to Comparative Politics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1609. Psy 1003, General Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1610. Psy 2021, Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1611. Soc 1101, Introduction to Sociology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1700. Amin 1120, American Indians in the 20th Century. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1701. Anth 1602, Prehistoric Cultures. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1702. Writ 1506, Literacy, Technology and Society. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1703. CST 1004, From Classical Antiquity to Medieval Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 1704. Cst 1020, Landscapes, Environments and U.S. Culture. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1705. CSt 1030, Frontier Heritage in Canada & U.S. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1706. CSt 1201, American Working Class and Culture: The Struggle for Control. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1707. Educ 1101, Education in Modern Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1708. Hist 1207, Dawn of Modern Europe. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1709. Hist 1208, Europe in the Modern Age. (1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1710. Hist 1304, U.S. History Part I: 1607-1877. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1711. Hist 1305, U.S. History Part II: 1865-Present. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1712. Hist 2245, Science and Society: 1500-Present. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1713. Hist 2265, Russia in the 20th Century. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1714. Hist 2355, U.S. Military History. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1715. Hist 2357, Women in American History. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1716. Hist 2515, Precolonial Africa. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1717. PE 2001, Sport Ethics and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1718. Phil 1003, Ethics and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1719. Phil 1007, Philosophy and World Religions. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1720. Pol 1610, Politics and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1721. WS 1000, Introduction to Women's Studies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1722. Phil 1001, Introduction to Philosophy. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 1800. Acct 2005, Survey of Accounting. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1801. BLaw 2001, The Legal Environment. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1802. Comm 1500, Media and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1803. Comm 2101, Foundations of Mass Communications. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1804. Csd 2230, Human Communication Disorders. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1805. CSt 1040, American Immigrant Heritage. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1806. CSt 1101, Introduction to Cultural Studies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1807. Econ 1003, Economics and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to a Study Abroad Program, required consent from the International Education Office.

FST 1808. Educ 1100, Human Diversity. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1809. Educ 1201, Managing Planet Earth. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
consent from the International Education Office.

**FST 1810. FMIS 1601, Consumer Finance.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1811. Geog 1202, World Regional Geography.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1812. Geog 2306, Environmental Conservation.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1814. Hth 1100, Health and Wellness: Strategies for Life.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1815. IntS 1066, An Introduction to Britain.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1816. IntS 1070, An Introduction to Scandinavia.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1817. Phil 2021, Science and Pseudo-Science.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1818. Phil 2250 Feminist Issues in Philosophy.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1819. Pol 1050, International Relations.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1820. Pol 1200, Introduction to Public Policy.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1821. Psy 2023, Marriages and Family Worldwide.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1822. Psy 2223, Gender in Society.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1823. SBE 1101, The Business Environment.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1824. Soc 1201, Sociology of the Family.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1825. Soc 1301, Introduction to Criminology.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1826. Span 2540, Latino Literatures and Cultures.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1827. SW 1210, Global Issues.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1828. SW 1619, Race, Class and Gender in the U.S.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1829. SpEd 1357, Individuals with Disabilities in Society.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1830. WS 2101, Women, Race and Class.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 1831. Phil 1003, Ethics and Society.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 1832. LSBE 1101, The Business Environment.** (1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 1900. Study Liberal Arts in Galway Ireland.** (1-20 cr.; Student Option; Periodic Spring)
Study abroad prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 1900. Amln 1106, American Indian Prose, Poetry and Oratory.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 1901. Study in Segovia Spain.** (1-20 cr.; Student Option; Periodic Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 1901. Amln 2105, Survey of American Indian Arts.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.
University of Minnesota Duluth Catalog  

Fall, 2018

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

Foreign Studies (FORS)

FORS 1902. Study in Bibao Spain. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 1902. Art 1001, Art Today. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 1903. Study Science and Engineering in Galway Ireland. (1-20 cr.; Student Option; Periodic Spring) Study abroad prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 1903. Art 2814, Creating Across Cultures. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1904. Art 1900, Visual Literacy. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1905. Arth 1303, History of World Art I. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1906. Arth 1304, History of World Art II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1907. Arth 2305, Classical Themes in Art History. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1908. Arth 2390, American Art of the 20th Century. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1921. Engl 1805, Satire and Humor. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1918. Engl 1582, Introduction to World Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1919. Engl 1585, Australian and New Zealand Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1920. Engl 1666, Tales of Terror. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1922. Engl 1907, Introduction to Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1923. Engl 2571, Contemporary Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1924. Engl 2581, Women Writers. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1925. Fr 2315, French Cinema. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1926. Mu 1001, Introduction to Music. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1927. Mu 1003, Beethoven to the Beatles. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 1938. Ecology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 1939. Chem 1105, From the Industrial Revolution to Green Chemistry. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 1940. Writ 1006, Journal and Memoir Writing. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 1941. Introduction to the European Union. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 1942. Biology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

FST 1943. Introduction to Marine Biology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

FST 1944. PE 1620 Aikido. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

FST 1945. Art 1814 Creating Across Cultures. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 1946. World History 600 - 1900 CE. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 1947. FA 1102 Creating Art. (1-20 cr.; Student Option; Periodic Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 1948. Chin 1103 Beginning Chinese III. (0 cr.; A-F or Audit; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2006. New Testament. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2007. Women in Islam. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2008. Natural History of the English Countryside. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2009. Practical Studies, Games. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2010. Popular Music. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2011. Introduction to Psychology of Human Behavior. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2012. Contemporary Issues in Dance. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2013. Span 2301, Advanced Spanish. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2014. Int S 1191, International Study. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2015. From Elvis to Madonna. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2016. Fashion Illustration-Introduction to Figure Drawing. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2017. Art 1100, Painting. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2018. Poetry I. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2019. Literary Periodisation. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2020. Celebrating Annual Cycle: Composition European Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2021. Soc 2311, Criminological Theory. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2022. Understanding Modern Ireland. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2023. Introduction to the Literature of the Hebrew Bible. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2024. Introduction to Communication. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 2025. HIST 2025 History in Greece. (3 cr.; A-F or Audit; Summer Even Year) Taught on site in Greece. Examine the history of ancient Greece and how the image of Greece affected Western Europe through the Renaissance and Enlightenment. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 2025. Australia Media Cultures. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2027. International Business Seminar. (1-20 cr.; Student Option; Every Fall & Spring) Study Abroad course. prereq: Admitted to an approved study abroad program, required consent from the International Education Office.

FST 2028. Persuasion in British Life. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2029. Experimental Music I. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 2030. HIST 2030 China An Ancient Civilization. (3 cr.; Student Option; Periodic Summer) Taught on site in China. This course is an introduction to Chinese culture for students who are interested in but have little knowledge of ancient Chinese history. It will introduce Confucianism, Buddhism, Daoism, and other schools of thought. It will also introduce topics such as gender relations, Chinese medicine, food, and the martial arts. It will prepare students for other courses in Chinese history. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 2030. Performance. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2031. Gender Equality and Swedish Welfare State. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 2033. Acct 2002, Principles of Management Accounting. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2034. Econ 2030, Statistics: Methods, Analysis. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 2035. International Volunteer Experience. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2036. The Making of Australia. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2037. Australian Media. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2038. Art 2907, Typography. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2039. Art 2911, Graphic Design I. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2040. Art 1301, Printmaking I Lithography & Silkscreen. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2042. Introduction to Management. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2043. Sociocultural Theory with Application. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2044. Beverages I. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2045. Introduction to Communication and Culture. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2046. Australia’s Terrestrial Environment. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2047. Crime and Deviance. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2048. Contemporary Australian Writing. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2049. Family Process. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2050. Biol 2201, Genetics. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2053. World History. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to a Study Abroad Program, required consent from the International Education Office.

FST 2054. Studio Art I. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2055. Ecological Systems. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2056. Biology of Marine Animals. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2057. Marine Environment. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2058. British Cinema Representation & Identity. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2059. Art, Music, Culture in Florence. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2060. Chem 2107, Introductory Environmental Chemistry. (; 1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2061. Introduction to Cognitive-Biological Psychology. (; 1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2064. Biol 2802, Ecology Laboratory. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2067. Art History/Theory. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2069. FMS 1201, Intro Business Information Systems. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2070. Art 1500, Jewelry and Metals. (; 1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2071. Introduction to Fashion Design I. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2072. Literature & Culture: (Post )
Modernism. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2073. The Abbey Theatre: A History of Irish Drama. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2074. Anglo-Irish Literature in the 20th Century. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2077. Hlth 2030, Applied Human Anatomy. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2079. Introduction to Ngai Tahu. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2080. Introduction to Education. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2081. Design Studio I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2082. Geol 2110, Earth History. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2083. Geol 2120, Earth’s Dynamic Interior. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2084. Geol 2300, Basic Mineralogy & Petrology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2085. Cultural Studies 211-Post Modern Transitions. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2086. Cultural Narratives III. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2087. Art 1125, Watercolor I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2088. Acct 2001, Principles of Financial Accounting. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 2089. Health and Human Development. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2090. Australian Flora. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2091. Communication Research. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2092. Undergraduate Media Relations. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2093. Public Relations Practice. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2094. Health Information and Communication. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2095. Spanish Regional Folk Dance. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2096. ChE 2011, Design of Engineering Experiments. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2099. Art 1600, Photography I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2100. Introduction to Natural Therapies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2101. Dances of Latin America. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 2102. Understanding Culture. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 2103. Intro to Peace Studies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2104. Communication and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2105. International Mass Communication. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2106. AmIn 2115, Ojibwe History and Culture. (1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.
FST 2107. Soc 2111, Sociological Theory.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2108. Art 1012, 3-D Design.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2109. Math 1005, College Algebra.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2110. Introduction to Martial Arts.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2112. Aspects of Medieval English Society.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2113. Social Welfare/Democr Citizen.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2114. Animal Biology.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2115. CommB Comp Brit/Amer Media.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2116. Aspects of Irish Folklore.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2118. Indigenous Australia.  (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2119. Educ 1000, Human Development.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2120. Educational Practicum.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2121. Introduction to Studio Practice I.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 2122. Cell Biology.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2123. Art 1510, Weaving and Fibers I.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2124. Australia - Land and Nation.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2125. ES 1001, Introductory Seminar to Environmental Studies.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2126. Mu 1541, Chamber Music.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2127. Tin Whistle.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2128. French Review.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2129. An Intro to Irish History for Visiting Students.  (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
consent from the International Education Office.

**FST 2144. Australian Colonial Visions.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 2145. Legal Framework 100.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 2146. Hlth 2040, Principles of Human Physiology.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 2147. Gender, Culture and Representation.** (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2148. Contemporary Crime Problems.** (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2149. Inventing Americas: Introduction to American Studies.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2150. Human Rights.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2151. Youth and Society.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2152. Fall Culture, Identity, Difference.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2153. Spring Culture, Identity, Difference.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.

**FST 2154. Women, Family and Work.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved Study Abroad program, required consent from the International Education Office.

**FST 2155. Studies in Applied Sociology.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2156. Microbiology.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2157. Soc 2001, Sociological Perspective.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2158. Sociology of Development.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2159. British Drama Now.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2160. Theatre in London.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2161. Television Cultures.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2162. Organizational Behavior.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2163. Corporate and Commercial Banking.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2164. Getting of Wisdom: Literary Youth and Maturity.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2165. Writing Non-Fictional Forms.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2166. Studies in Applied Sociology.**

**Catholic Church in Modern Ireland.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2167. Social Sciences in Australia.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2168. Introduction to American Studies.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2170. Television Cultures.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2171. FTV: News, Current Affairs and Actuality.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2172. Introduction to Computing II.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2173. Introduction to Tropical Marine Biology.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2174. Marine Biology Laboratory.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2175. Edinburgh Experience.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2176. Polish Society and Politics.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.
FST 2177. Indigenous Australia Sport 201. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2178. Rec 1202, Outdoor Skills II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2179. Women in Film. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2180. Film and Television History of Screen Language. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2181. Anatomy and Physiology I. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2182. Approaches to Sociology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2184. Introduction to Archaeology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2185. The Australian Writing and Culture. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2186. Australian Writing And Culture. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2187. New Zealand Literature I. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2188. Inventing Kiwi Culture. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2189. Three American Revolutions. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2190. Biol 1012, General Biology II. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2191. Econ 2030, Applied Statistics for Business and Economics. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2192. Films of Neil Jordan. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2193. History of Independent Finland. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FORS 2195. ART 2595 Art, History and Visual Culture in Turkey. (3 cr.; Student Option; Periodic Summer) Study abroad prereq: Admission to an approved study abroad program, Required consent from the International Education Office

FST 2196. Irish Folklore I. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2197. Dreamtime to Dust. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2198. Political and Economic History of Europe in the 20th Century. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2199. Introduction to Film Studies II. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FORS 2200. International Education. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FORS 2201. Educational Assessment. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Educational Office

FORS 2202. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office

FORS 2203. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study abroad course. Admission to an approved study abroad program requires consent from the International Education Office

FST 2203. Hiking, Biking, Rafting. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FORS 2204. International Education. (0.5-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office

FST 2204. Topics in Australian Literacy Cultures. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

**Foreign Studies (FORS)**

**FORS 2205. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 2206. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 2207. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 2208. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2205. Finance.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2206. Gender Issues in the Contemporary Context.** (1-20 cr.; Student Option; Periodic Fall)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2208. USA Today: Society, Culture, Identity.** (1-20 cr.; Student Option; Periodic Fall)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2209. Australian Modern: Making Histories.** (1-20 cr.; Student Option; Periodic Fall)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2209. Australian Modern: Making Histories.** (1-20 cr.; Student Option; Periodic Fall)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2210. European 20th Century Music.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2211. Jour 2001, Reporting and Writing I.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2212. Biol 2101, Cell Biology.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2213. Creative Writing I.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2214. Literature, Culture, History.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2215. Management Statistics.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2216. Pol 2700, Methodology and Analysis.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2218. Czech Film.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2219. Culture and Civilization of Australia.** (1-20 cr.; Student Option; Every Fall)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2220. Regional History-Australia.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2221. What is Communication.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2222. Academic Presentations.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2223. Psychology.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2224. Analytical Chemistry.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2225. Chem 1114, Introduction to General, Organic, Biological Chemistry.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2226. Chem 1152, General Chemistry II.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2227. Pol 2700, Methodology and Analysis.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2228. Czech Film.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2229. Great Books I.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2230. Introduction to Screenwriting.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2231. Literary Studies 212: Narrative and Culture.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2232. Music and Computers.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2234. Australian History - The Twentieth Century.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2235. Intro to Philosophy of History Herodotus to Foucault.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course: Admission to an approved study abroad program requires consent from the International Education Office.
FST 2237. International Study Tour Fiji, Australia, New Zealand. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2238. Studies of Outcast Children & Youth 1850-1914. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2239. Introduction to Tourism. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2240. General Mathematics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2241. Rec 1201, Outdoor Skills I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2242. Concepts in Biology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2243. Contemp Maori Art. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2244. Hyperpower: The United States. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2245. CS 1521, Computer Science II. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2246. CS 2511, Software Analysis and Design. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2247. CS 2521, Computer Organization & Architecture. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2248. Exploring New Zealand History: Aotearoa. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2249. Chinese History and Social Institutions I. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2250. Flowering Plants. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2251. Fame and Celebrity. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2252. Intro to Empire: British and America Since 1815. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2253. Engl 2922, Honors Seminar: The Art of the Memoir: Reading and Writing Memoirs. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2254. Evolution, Biodiversity and Environment. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2255. PEP 2000, Foundations of Physical Education. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2256. Introduction to British Civilization. (1-20 cr.; A-F or Audit; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2257. The Family in British Society 1800-1950. (1-20 cr.; A-F or Audit; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2258. Physical Education and Health in the Schools. (1-20 cr.; A-F or Audit; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2259. International Business. (1-20 cr.; A-F or Audit; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2260. Sociology and Future Societies. (1-20 cr.; A-F or Audit; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2275. Social Analysis in Society I. (; 1-20 cr.; Student Option; Every Fall) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2276. Native Peoples of South America 16th- 20th Century. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2277. FMIS 2201, Information Technology in Business. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2278. Exploring Culture: Introduction to Anthropology. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2280. Introduction to Calculus. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2281. International Folk Dance. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2282. Te Raranga Kete: Flax Weaving. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2284. Barcelona: The Cosmopolitan City. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2285. Mediterranean Ecosystems. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2286. Mediterranean Environ: Exploitation, Pollution, Policy. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2287. Genes and Genomes. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2288. Biology of Australian Flora and Fauna. (; 1-20 cr.; Student Option; Every Fall & Spring) Study a abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2289. Great 20thC Artists of Catalon. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2291. Beyond Utopia: City and Urban Europe/USA. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2292. History of Dev of Irish Identity. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2293. Culture and Lifestyle. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FORS 2295. ARTH 2595 Art, History and Visual Culture in Turkey. (3 cr.; Student Option; Periodic Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2296. Media, Culture and Society. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2297. Human Bodies, Culture and Society. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2298. Forensics. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2299. New Zealand Music. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved Study Abroad Program. Required consent from International Education Office

FST 2300. Dance as a Leisure Activity. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2302. 20th Century World Affairs. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2303. International Law. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2304. Gender, Power and Politics in Australia. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2305. Introduction to Forensic Science. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2306. Physical Activity and Health. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2307. Instructing in Sports and Leisure Setting. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2308. Love, Sex and Truth. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2309. Shooting the Mob. (; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 2310. Screen Studies - The Moving Image. (; 1-20 cr.; Student Option; Fall Odd, Spring Even Year)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2311. Th 2851, Film History. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2312. Locating the Global Society. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2313. Relationship Communication. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2314. Art 1013, 2-D Digital Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2315. Ethnography and Anthropological Theory. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2316. Visual Computing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2317. 20th Century Art and Theory. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2318. Swedish History and Heritage. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2319. Swedish Film. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2320. Studies in Socio-Cultural Understanding. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2321. Current Trends in Italian Cuisine. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2322. The Wines of Italy. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2323. Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2324. Japan from Prehistory to Present. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2325. Introduction to Literature and Screen Studies. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2326. Russian Language Camp. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2327. Art History. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2328. Aesthetics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2329. Photographic Practices. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2330. Art 1013, 2-D Digital Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2331. Britain and the World 1776. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2332. The Mafia-Culture and Politics. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2333. The Contemporary United States. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2334. Travel Journal & Creative Writing. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2335. Czech Music. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program. Required admission from the International Education Office.

FST 2336. Comparative Social Policy. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2337. Sexuality and Ethics. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2338. Teaching-Learning Process: Innovative Approaches. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2339. European Media. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2340. History of India to the 17th Century. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2341. Video Production I. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 2342. Geol 2312 Petrology. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2343. Psychology Across Culture. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2344. Phys 2012 General Physics II. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2345. Art 2400 Ceramics I. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2346. Aesthetics of Design. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2347. CAD for Interior. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2348. Introduction to Interior Design. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2349. Introduction to Art History. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2350. Art 1012 3-D Design. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2351. ES 2001 Ecosystems I. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2352. ES 2002 Ecosystems II. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2354. Non-Western Instruments-Gamelan Ensemble. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2355. PEP 1600, Teaching Fitness and Weight Training. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2357. Thinking About Society, Technology and Culture. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2358. Wine Studies I. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2359. Adventure Programming. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2360. ECE 1315 Digital System Design. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2361. Intercultural Understanding and Competence. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2363. Australian Dance. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2364. Chem 2521, Organic Chemistry I. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2365. Digital Technology. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2366. Computing Experience. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2367. Sports and Entertainment in Greece and Rome. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2368. Ancient History I. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2369. Introduction to Technology. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2370. Ensemble in Turkey. (; 1 cr.; A-F or Audit; Every Spring & Summer)
Study abroad course prereq: This course will fulfill one of the following course requirements for student participants: Mu 1511 University Singers (LEIP 10), Mu 1503 Symphoney Orchestra (LEIP 10), Mu 4511 University Singers, or Mu 4503 Symphony Orchestra. Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2371. Human and Other Mammals: Structure and Function. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required
FST 2372. Social Policy and New Zealand. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2373. Behavioral and Evolutionary Ecology. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2374. Family Life in Japan. (;1-20 cr.; Student Option; Every Fall)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2375. Social Problems and Social Life. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2376. Crime and Social Life. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2377. Professional Medical Internship. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2378. Language and Society. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2379. Practicum in Sports C. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2380. History of Persons with Disabilities. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2381. Seminar in English Debate. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2382. The English Language- British/ American Culture. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2383. Seminar in Japanese Koto Music. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2384. Seminar in Philosophy of Language. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2385. Advanced Communication Practice II. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2386. Japanese Economy. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2387. Japanese Culture and Education. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2388. Elementary Japanese I A. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2389. Elementary Japanese I B. (;0 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2390. Elementary Japanese I C. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2391. Elementary Japanese II A. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2392. Elementary Japanese II B. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2393. Elementary Japanese II C. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2394. Global Perspectives in the Classroom. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2395. Art 2905, Design Technology I. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2396. Contemporary Issues in Plural Societies. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2397. Issues in Australian History. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2398. Clothing and Society. (;1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2399. Graphics and Animation Technologies. (;1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FORS)

FORS 2401. BIO 2401 Evolution in England. (NAT SCI; 4 cr.; A-F or Audit; Every Summer)
Study abroad course taught in England. Evolutionary Biology is a cornerstone of
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

**Foreign Studies (FST)**

**FST 2401.** Chem 2242, Analytical Chemistry Applied to the Environment in Eastern Europe (Poland). (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2402.** American History X: Contemporary Debates. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2403.** Cultures and Creativity. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2404.** Introduction to Fashion Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2405.** Design in Context 192. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2406.** Sculpture Beginning. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2407.** Sociology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2408.** Inter-American Relations. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2409.** Italian Vegetarian Cooking. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2410.** Italian Language. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2411.** Understanding Environmental Issues. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2412.** Biology of Women. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2413.** Introduction to Computers. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2414.** Natural History of the Earth. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2415.** Leadership. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2416.** Concept to Customer. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2417.** Fashion Promotion. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2418.** Fashion in Context. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2419.** History of Western Art. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2420.** Environmental Education. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2421.** The Evolution and Diversity of Life. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2422.** Microbiology: Form, Function, and Metabolism. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2423.** Biol 2801, Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2424.** The Cold War: An International History. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite: Admission to an approved study abroad program. Required consent from the International Business Office.

**FST 2425.** Functional Animal Behavior. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2426.** Art 2100 Painting I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2427.** Aotearoa/ New Zealand Screen. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2428.** Conflicts and Crises in the Middle East. (1-20 cr.; Student Option; Periodic Fall & Spring)

modern science, and since its introduction by Charles Darwin over 150 years ago it has produced a dramatic paradigm shift in how humans view themselves and all life on this planet. We will explore the history of evolutionary theory from both an "internalist" perspective and an "externalist" perspective. We will review scientific evidence for evolution and will particularly focus upon the explosion of insights provided by Molecular Biology in the past 20 years. Past and current social implications will be discussed as well as modern evolutionary challenges like drug-resistant infectious diseases, genetic modification of crops, and dwindling biodiversity. The course will be taught onsite at locations relevant to the history of evolution and examined in the cultural context of Regency and Victorian England in which the theory was first formed. This course is for non-majors and cannot be used towards the Biology B.A. electives. pre-req: high school biology course, instructor consent
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2429. Ethics of War and Terrorism. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2430. Italian Cuisine. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2431. Italian Gardens: Renaissance to Baroque. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 2432. Policy Issues: International Perspective. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2433. Comparative Government of Central and Eastern Europe. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2434. Fashion 1980-Now. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2435. Introduction to the World’s Biomes. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2436. Biological Systems. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2437. Tuscany and Its Wines. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2438. Intercultural Business Communication. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2439. Management, People and Organizations. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2440. Introduction to Politics. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2441. Styles and Genres of Journalism. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2442. Dance Performance II. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2443. Dance Styles I. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2444. Peace Education. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 2445. Electronic Commerce Overview. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2446. History and Culture of East Central Europe. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2447. German Speaking Europe and Its Culture. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 2448. Reading and Writing about History. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2449. Documents and Methodology. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2450. Britain and India. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2451. Social and Developmental Psychology. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2452. Education, Swedish Society and Culture. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2453. Mauritius History. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2454. Science Communications 101. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2455. Public Relations and Applied Communication. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2456. Communication in Aotearoa/New Zealand. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2457. Art Criticism Seminar. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2458. Engr 2110 Introduction to Material Science for Engineers. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
consent from the International Education Office.

**FST 2459. Engr 2016 Mechanics of Materials.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2460. Popular Culture and Media Theory.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2461. Irish Participation in the America's Civil War (1861-1865).** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course, prereq: Admission to an approved study abroad program. Required permission from the International Education Office.

**FST 2462. Northern Ireland.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 2463. The British Empire, 1880-1945.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2464. Introduction to the EU.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2465. Mu 2105 Composition I.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2466. Indigenous Australian Sport.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2467. Global Communication: Transnational and National I. Intermediate Course.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2468. Ast 2040 The Solar System.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2469. Arab Media and Communication.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2470. Wine and Culture I: The Wines of Italy.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2471. The Food of Italy.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2472. Introduction to Intercultural Communication.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2473. Engr 2026, Dynamics.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2474. Fashion in Film.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2475. Art 2500 Jewelry and Metals.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2476. Art 2600 Photography I.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2477. Calendars Throughout History.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2478. The Creative Industries.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2479. English as a Global Language.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2480. Outdoor Pursuits- Aquatics.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 2481. Stress: Work, Technology and Life.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2482. Introduction to Digital Media.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2483. Politics of Terrorism.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2484. Basic Seamanship.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2485. Student Leadership Development.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2486. Gender Communications.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2487. Body Language and Communications.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2488. Communication and Democracy in Australia.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 2489. Jour 2400, Journalism and Community.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.
FST 2490. Comparative Politics of the Middle East. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2491. British Political System. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2492. Introduction to Food Science. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2493. Market Research. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2494. Principles of Marketing. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2495. Purchasing. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2496. Relationships: Sociology and Everyday Life. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2498. New Media Technologies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2499. Language, Media, Power. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

FST 2500. Maori Art and Design Studio I - Toi Atea. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

FST 2501. Quantitative Analysis. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2502. Quantitative Analysis Laboratory. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2503. Game Studies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2504. Indigenous peoples and the right to land and water. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2506. Central European Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2507. Teaching practice for exchange students in Swedish Schools. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2508. Geography of the Cities of the World. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2509. The Cold War: Politics, Security and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2510. Natural History of the Countryside. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2511. Forms of Nonfiction Writing. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2512. The History of Italian Theater: La Commedia Dell’Arte, Goldoni, Pirandello. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2513. Regional Geography: The Pacific Islands. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2514. Post-Industrial Business in Milan: The Case of Fashion. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2515. CHEM 2542 Organic Chemistry II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2516. CHEM 2545 Organic Chemistry II Lab. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2517. Art in Argentina. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2518. Intercultural Communication. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2520. Social Dance. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2521. Painting Techniques. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2522. European Affairs and Media. (1-20 cr.; Student Option; Periodic Fall & Spring)
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2523. Prague Art and Architecture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2524. Central and East European Film Seminar. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2525. Animal Physiology and Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2526. Good Administration. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2527. Natural Hazards. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2528. Writing and Audience. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2529. Public International Law. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2530. Orientation in Academic Studies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2531. Creative Writing Poetry. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2532. Tokyo Art. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2533. Experiencing Italy through Art, Music, and Art History. (1-20 cr.; Student Option; Periodic Spring & Summer) Study abroad prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2534. International Study. (1-20 cr.; Student Option; Periodic Summer) Study abroad program prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2535. Orientation in Academic Studies for International Students. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2536. Business Communication. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2537. Presence of the Past. (0 cr.; A-F or Audit; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2538. Business Accounting. (1-20 cr.; Student Option; Periodic Fall) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2539. CS 2991 Independent Study. (1-20 cr.; Student Option; Periodic Fall) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2540. Contemporary French Cinema. (1-20 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2541. Religion in Korean Society. (1-20 cr.; Student Option; Periodic Summer) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2542. T: Education in Ireland. (1-20 cr.; No Grade Associated; Periodic Summer) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2543. Xian Field Study. (3 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2544. Biophysics and Quantitative Biology. (3 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2545. Managerial Skills for International Business. (3 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2546. Celtic Myth and Legend. (3 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2547. Contemporary Irish Drama. (3 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2548. Business Accounting. (1-20 cr.; Student Option; Periodic Fall) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 2595. FA 2595 Experiencing Italy through Art, Music and Art History. (1-20 cr.; Student Option; Periodic Spring & Summer) Study abroad prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FORS 2892. ARTH 2892 Independent International Study. (1-20 cr.; Student Option; Periodic Summer) Study Abroad pre-req: Requires approval from International Programs and Services Office.

FORS 2893. ARTH 2892 Independent International Study. (1-20 cr.; Student Option; Periodic Summer) Study Abroad pre-req: Admission to an approved study abroad program requires consent from the International Programs and Services Office.
Foreign Studies (FST)

FST 2929. Orientation to Foreign Studies. (2 cr.; S-N or Audit; Periodic Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 2996. Fitness and Lifestyle Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3000. AAAS 3000 Kenyan Experience. (6 cr.; A-F or Audit; Every Summer) This course provides a critical study of Kenyan cultures and education. Taught on site in Kenya, the course will richly enhance students' understanding of the social, economic, and political challenges influencing contemporary Kenya, from colonization to globalization. It will draw on education, folklores, women's lives, literature, ecoactivism, and ecocriticism in its attempt to promote diversity, global perspectives, and sustainability. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3001. Introduction to Biological Anthropology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3001. Special Topics: (Various Titles to be Assigned). (1-15 cr.; Student Option; Every Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3002. Geog 3370, Geographies of Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3002. Econ 3410, International Economy and Finance. (1-20 cr.; Student Option; Every Fall & Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3003. Geog 3334, Urban Geography. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3003. FMIS 3649, International Finance. (1-20 cr.; Student Option; Every Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3004. Positive Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3004. Geol 3110, Environmental Geology. (1-20 cr.; Student Option; Every Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3005. Leadership and Teamwork. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3005. IntB 3201, International Business. (1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3006. Hist 3235, History and Soccer. (4 cr.; A-F or Audit; Periodic Fall & Spring) Taught on site in England. Over the past two centuries "soccer" has developed from an informal and regionally variable pastime into the single most popular sport on earth. This phenomenon is incomprehensible without the specific social, cultural, and geographic considerations of nineteenth and twentieth century Britain and its colonies. The sport will be used as a lens through which to examine the social and cultural aspects of the Industrial Revolution and the British Empire, focusing on the central question: "How did historical forces facilitate the rise and spread of the World's Game?" Covers the techniques of historical methodology and source analysis, and the general narrative of the Industrial Revolution and British Empire (including colonial perspectives), as well as the internal history of the game itself. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3006. MgtS 3781, International Marketing. (1-20 cr.; Student Option; Every Fall & Spring) Study Abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3007. Anth 3635 Peoples and Cultures of Europe. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3007. Phil 3421, Oriental Philosophies. (1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3008. The Archaeology of Medieval Church. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3008. WS 3000 International Perspective on Feminism. (1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>FORS 3009</td>
<td>The Development of the Castle in Medieval Europe</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3012</td>
<td>Poetry Choices, British Periods.</td>
<td>(1-20 cr.; Student Option; Periodic Fall)</td>
<td>Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3009</td>
<td>Selling Dubai- An Emirate Emerges from Sand and Sea</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3013</td>
<td>Exploration of British Environmental History</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3010</td>
<td>Hist 3320 American Popular Culture: 1940 to Present</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3014</td>
<td>Masters of Italian Cinema: Fellini.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3011</td>
<td>IntS 3167, Study in Sweden Evaluation</td>
<td>(1-20 cr.; max 1 cr.; Student Option; Periodic Fall)</td>
<td>Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3015</td>
<td>The Venice Film Festival</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3012</td>
<td>ME 3111 Fluid Mechanics.</td>
<td>(1-20 cr.; Student Option; Every Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3016</td>
<td>History of British Politics: Revolution Today</td>
<td>(1-20 cr.; max 1 cr.; Student Option; Periodic Fall)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<td>FORS 3013</td>
<td>Fitness and Lifestyle Management.</td>
<td>(1-20 cr.; Student Option; Periodic Fall)</td>
<td>Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3017</td>
<td>War and Society.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3014</td>
<td>English Architecture.</td>
<td>(1-20 cr.; Student Option; Periodic Fall)</td>
<td>Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FST 3018</td>
<td>EDSE 4600, Student Teaching in Belize.</td>
<td>(6 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3015</td>
<td>The Development of the Castle in Medieval Europe</td>
<td>(1-20 cr.; Student Option; Periodic Fall)</td>
<td>Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3019</td>
<td>Aegaean and Ancient Greek Art and Archaeology</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3016</td>
<td>Ger 3048, German Culture &amp; Civilization Study Abroad IV</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FST 3017</td>
<td>History of British Politics: War and Society</td>
<td>(1-20 cr.; max 1 cr.; Student Option; Periodic Fall)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3018</td>
<td>History of British Politics: Making of Modern Britain</td>
<td>(1-20 cr.; max 1 cr.; Student Option; Periodic Fall)</td>
<td>Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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</tr>
</tbody>
</table>


**Foreign Studies (FST)**

**FST 3019. Religion and the Rise of Atheism, Theological Responses.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FORS 3020. Erasmus Literature 1790 to Present.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3020. Phil 3325, Environmental Ethics.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3021. Medieval Travelers.** (; 1-20 cr.; No Grade Associated; Periodic Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3021. Psy 3021, Experimental Design and Methods.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3022. Theories of Self.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3022. Psy 3621, Cognition.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3023. Cross-Culture Psychology Culture Shock.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course, prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3023. British Women in the 20th Century.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3024. Spanish for Business.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course, prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3024. ArtH 3370, European Art, 1900-1945.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course. Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3025. Spanish Business Area Study.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3025. Art 3095 T: Northern Lights -The Visual Arts and Art Education in Sweden, Estonia and Finland.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3025. Anth 3695, Special Topics: Archaeology of Great Britain.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3026. CSD 3000, Deafness in Society: A Historical, Cultural and Educational Perspective.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3027. Anth 3695, Special Topics: Archaeology of Great Britain.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3028. Arth 3330, Renaissance Painting and Sculpture.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3029. National Resource Learning: Skills Practicum.** (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad course, prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3029. Nat 3695, Special Topics: Environmental Ethics.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course, prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3029. IntS 3191, International Study.** (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

**FORS 3030. Psy 3991, Projects in Psychology.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FORS 3031. National Resources Learning, Group Leadership.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3031. Econ 3031, History of Economic Thought.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3032. History of Mass Media and Communication Theory.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3032. Psy 3061, Physiological Psychology.** (1-20 cr.; [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3033. Sociology, History of Italian Mafia.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3035. HPER 3000, Organization and Administration of Health, Physical Education, and Recreation.** (1-20 cr.; [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3036. Econ 3036, Radical Economics.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3037. Jour 3700, Media Law and Ethics.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3038. Cross-Cultural Rhetoric.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3038. The Rise of Modern Science, Historical Biblical Criticism, Theological Response.** (1-20 cr.; [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3039. Philosophy of Religion.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3039. History of Communication.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3040. Information and Communication Policy.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3040. GER 3040, Culture of Germany.** (4 cr.; A-F or Audit; Every Spring & Summer)
Taught on site in Germany. Study of German culture, both contemporary and past as it informs the present, on site in Germany. Conducted entirely in German, and all language skills will be inculcated and improved. Format will include seminar, discussions, field trips, and small group projects. prereq: GER 1202 or equivalent, admitted to an approved study abroad program, required consent from the International Education Office.
Foreign Studies (FORS)

FORS 3041. Information Science. (.1-20 cr.; Student Option: Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3041. CST 3715, Popular Culture. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3042. Science, Technology and the Media. (.1-20 cr.; Student Option: Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3042. Formation of the European Legal Tradition. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3043. Attic Tragedy. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3043. Work and Family in Transition. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3044. Pol 3426, Politics of International Organization and Law. (.1-20 cr. [max 1 cr.] ; Student Option; Every Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3044. Art 3700, Drawing II. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3045. Pol 3517, Western European Political Systems. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3045. Forsensic Psychology. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3046. Cultural Identity Through Art and Design. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

Foreign Studies (FST)

FST 3046. Hist 3243, Europe in Crisis in the 20th Century. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3047. Independent Study Project. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, requires consent from the International Education Office.

Foreign Studies (FST)

FST 3047. Hist 3244, History of the Holocaust. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3049. Criminal Profiling. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3049. An Introduction to British Imperial Expansion. (.1-20 cr. [max 1 cr.] ; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3050. Mexican Social Movements. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3050. Psy 3707, Organizational Psychology. (.1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3051. Mexican Culture. (.1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
<table>
<thead>
<tr>
<th>Foreign Studies (FST)</th>
<th>Foreign Studies (FORS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST 3052. Psy 3022. Applied Methods and Measurements. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3053. Political Economy. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3053. History of Autonomous Finland. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3054. Development of the European Union. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3056. Pol 3652 Modern Political Thought. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3056. Hist 3091, History of Sweden. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3057. Lang 3095, Special Topics: Swedish and Scandinavian Studies. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3058. Environmental Governance. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3059. Phil 3245 Aesthetics. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3059. ECh 3950, Guided Observations in Diverse Settings: Birth-Age Eight. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3060. ChE 3111, Fluid Mechanics. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3061. Adolescent Behaviour. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3062. FMIS 3201, Management Information Systems. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3063. Monuments of Greece. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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</table>
FST 3063. MgtS 3401, Organizational Behavior. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FORS 3064. Japanese Society A. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3064. MgtS 3801, Human Resource Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FORS 3065. Mediterranean Politics and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3065. FMIS 3601, Corporation Finance. (1-20 cr. [max 1 cr.]; Student Option; Every Fall & Spring) Study Abroad Course prereq: Admission to approved Study Abroad Program, required consent from the International Education Office.

FORS 3066. Seminar in Japanese Studies B. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3066. MgtS 3711, Marketing Research. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FORS 3067. Th 3991 Independent Study in Theatre. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3067. FMIS 3141, Business Communications. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3068. Introduction to Latin American Tropical Dance. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3068. FMIS 3147, Financial Markets, Institutions. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3069. Theatre and Cultural Politics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3069. MgtS 3741, Fundamentals of Selling. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3070. Anth 3638 Peoples and Cultures of the Middle East. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3070. Finance Portfolio Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FORS 3071. MU 3995 English Music Musicians. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3071. Finance Decision Making. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3072. Greek and Roman Cinema and History. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3072. Finance Analysis. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3073. Fairy Tales in the Modern World. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3073. Facilities and Operations Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FORS 3074. Japanese Literature in the Movies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3074. FMIS 3647, Financial Markets, Institutions. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
FST 3074. HR Management Eval/Program. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3075. Language, Myth and Cultural Identities. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3075. Labour Markets. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3076. Management of Workplace Conflict. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3077. European Tragedy from the Renaissance to the present day. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3077. Japanese Culture A. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3078. International Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3079. WS 3896 International Fieldwork in Women's Studies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3079. Entrepreneurship. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3080. FMIS 3301, Production and Operations Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3080. Explores, Missionaries & Traders: Travelers and World History, 1400-1850. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3081. Scottish History - The Covenanters. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3082. Organization Theories II. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3083. Mediterranean, Black Sea Basin: A Global Crossroads. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3084. Food and Wine Tourism. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3084. Industrial Organization and Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3085. Ecotourism: Costa Rica. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST 3085</td>
<td>Production Management.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3086</td>
<td>Ancient Mythologies.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall &amp; Spring</td>
<td>Study abroad course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3086</td>
<td>Management Across Borders-Scand Perspec.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3087</td>
<td>Principles of Management.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3087</td>
<td>Scandinavian Marketing.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3088</td>
<td>Introduction to Population Studies.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3088</td>
<td>Scandinavian Design Management.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3089</td>
<td>Imagining Place Through Literature and Travel: A Writing Workshop.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study abroad course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3089</td>
<td>Company Project Work.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FORS 3090</td>
<td>Japanese Literature B.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FST 3090</td>
<td>Interpersonal Challenges in Multinational Organizations.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Summer</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FORS 3091</td>
<td>Telling My Story.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FST 3091</td>
<td>Span 3031, Spanish Lang Study Abroad I.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Spring</td>
<td>Study abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FORS 3092</td>
<td>Contemporary Australia.</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FST 3092</td>
<td>Span 3032, Spanish Lang Study Abroad II.</td>
<td>1-20</td>
<td>Fall, 2018</td>
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<td>Study abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3093</td>
<td>Gentlemen of Italy, Most Willing Spirits: Comparing English and Italian</td>
<td>1-20</td>
<td>Fall &amp; Spring</td>
<td>Student Option; Periodic Fall</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3093</td>
<td>The Child in Nineteenth Century Literature.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Summer</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3094</td>
<td>Masterpieces of Italian Literature in Translation.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Summer</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FST 3094</td>
<td>Historiography.</td>
<td>1-20</td>
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<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FORS 3095</td>
<td>18th Century Literature: Satire.</td>
<td>1-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Spring</td>
<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FST 3095</td>
<td>Span 3045, Span Culture &amp; Civ Study Abroad I.</td>
<td>0-5-20</td>
<td>Fall, 2018</td>
<td>Student Option; Periodic Fall &amp; Spring</td>
<td>Study Abroad Course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<td>FORS 3096</td>
<td>Geographies of Tourism, Planning and Development.</td>
<td>1-20</td>
<td>Fall, 2018</td>
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<td>Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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consent from the International Education Office.

Foreign Studies (FST)

FST 3096. Span 3046, Span Culture & Civ Study Abroad II. (1-15 cr. [max 10 cr.]; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Fors 3097. The Great Age of Italian Cities. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3098. Span 3048, Span Culture & Civ Study Abroad IV. (0.5-5 cr. [max 10 cr.]; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3099. Social and Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3099. Social and Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3098. Span 3048, Span Culture & Civ Study Abroad IV. (0.5-5 cr. [max 10 cr.]; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Fors 3099. Social and Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3098. Span 3048, Span Culture & Civ Study Abroad IV. (0.5-5 cr. [max 10 cr.]; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Fors 3099. Social and Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FOR)

FORS 3098. Italians in the Atlantic World. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3098. Span 3048, Span Culture & Civ Study Abroad IV. (0.5-5 cr. [max 10 cr.]; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Fors 3099. Social and Developmental Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3108. Acct 3110 Computer Applications in Accounting, 3201 Cost Accounting I. (; 1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3109. Renaissance Venice. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3109. Acct 3196, Internship in Accounting. (; 1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3110. Individual Differences. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3110. Pol 3456, International Security: Theory and Practice. (; 1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3111. Apocalyptic. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3111. Pol 3402, American Foreign and Defense Policy. (; 1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3112. Pol 3400, Contemporary Issues in World Politics. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3112. Pol 3451, Theories of International Relations. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3113. Topics in Argentine History. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3113. IntS WEN Music and Culture. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3114. Topos in American Music. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3114. Pol 3510, Russia and Eastern European Politics. (; 1-20 cr. [max 1 cr.] ; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3115. Public Law. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3115. IntS WEN Science, Invention and Discovery. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3116. Knowledge Management Information Security. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3116. IntS WEN EuroTour. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3117. International Law. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3117. IntS WEN Europe in the 19th Century. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3118. International Organizations and Interregional Relations. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3118. IntS WEN Policy Work. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3119. World Ethnography - The Nordic Countries. (; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3119. IntS WEN World Ethnography - The Nordic Countries. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3120. Political Economy Project Preparation. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3121. Anthropology of Central Europe: Change and Continuity in the Czech Republic.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3121. Econ 3022, Macroeconomics Analysis.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3122. Swedish Politics.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3122. Econ 3023, Microeconomics Analysis.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3123. Ritual in the Modern World.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3123. MIS Total Quality.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3124. Management Communication.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3124. Development Economics.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3125. HIST 3095 T: Studies in Social History: The US Civil War.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3125. Manufacturing Processes.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3126. Swedish Politics.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3126. Introduction to Indigenous Australians 101.** (1-20 cr. [max 1 cr.]; Student Option; Every Fall & Spring) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3127. Social and Cultural Diversity.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3127. Aboriginal Land and Native Title 101.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3128. CE 3425 Engineering Geology.** (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3128. Indigenous Australian Spirituality 101.** (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Foreign Studies (FST)

FST 3132. Drugs Across Cultures. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 3133. Australian Society. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 3134. Strategic and Operational Marketing. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3135. International Environmental Law. (1-20 cr. ; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3136. ChE 3112, Heat and Mass Transfer. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3137. Maritime Anthropology. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3133. Human Rights in Social Perspective. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3134. Strategic and Operational Marketing. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3135. International Environmental Law. (1-20 cr. ; Student Option; Periodic Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3140. Comm 3400 Health Communication. (1-20 cr. ; Student Option; Periodic Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3139. Spanish America Through its Writers. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3139. Going Places: Life, Literature and Travel. (1-20 cr. ; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3140. Comm 3400 Health Communication. (1-20 cr. ; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3141. Psycho Sociological Problems. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3142. A System View of Communications. (1-20 cr. ; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3143. Fundamentals of Robotics. (1-20 cr. ; S-N or Audit; Periodic Fall)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3144. The European Union: History, Economics Politics and Economic Integration. (1-20 cr. ; Student Option; Periodic Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 3155. Development of Irish Script/ Durrow-Kells. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3156. Human Resource Management. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3156. History of Irish Thought. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3157. Marketing in Central and Eastern Europe. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3157. Geol 3540, Geological Field Methods. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3158. Protected Area Management. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3159. STAT 3411 Engineering Statistics. (1-20 cr.; Student Option; Periodic Spring)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3159. Geol 3540, Geological Field Methods. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3160. Industrial Marketing. (1-20 cr.; Student Option; Periodic Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3160. Study in Greece: Art, Archaeology, History and Mythology. (1-20 cr.; Student Option; Periodic Summer)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3161. Mechatronics. (1-20 cr.; Student Option; Periodic Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3161. Psy 3691, Sensation and Perception. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3162. International Humanitarian and Development Interventions. (1-20 cr.; Student Option; Periodic Spring)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3162. Business Ethics. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 3163. Business Administration. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3163. Psy 3601, Psychology of Personal Development. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3164. Fundamentals of Marketing I. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3164. Psy 3111, Theories of Personality. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3165. Basic Organization Theory. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3165. Psychology (Cross-Cultural). (1-20 cr.; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3166. Fundamentals of Marketing II. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>CRs</th>
<th>Offered</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST 3167. Econ 3512, Managerial Economics</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3167, GEOG 3167 Cultural Geography of Iceland</td>
<td>(3 cr.; A-F or Audit; Periodic Fall, Spring &amp; Summer) Taught in Iceland this course explores the changing cultural &amp; political geography of Iceland and its relationship to the complex processes of globalization, regional politics and local economies. It examines the history of Iceland as a Viking settlement, a colony of Denmark, and an independent nation with a focus on the political and economic connection between Iceland and other places that have influenced the country. Students will examine Iceland's position as part of the European Economic Community but not of the common currency or the European Union, contributed to the 2008 economic crisis and the responses to that crisis. Student will consider how geographic context, national culture and political economy impact the cultural geography of Iceland and is designed to give an intercultural experience with contemporary economic and political issues through a geographic perspective. Students will apply geographic theories of cultural difference, political economy, and resistance to develop an understanding of the multiple sites and scales of Icelandic identity, culture and politics.</td>
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<tr>
<td>FST 3166. Econ 3512, Managerial Economics</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3167. Studio Art II</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FST 3167. Studio Art III</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3169, Healthcare Systems: US versus UK</td>
<td>(1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FORS 3169. Studio Art IV</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<td>FORS 3170. Leadership in Ireland</td>
<td>(1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FORS 3170. Psy 3121, Abnormal Psychology</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Every Fall &amp; Spring) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<td>FORS 3171. IE 3115 Operations Research</td>
<td>(1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FORS 3171. Psy 3524, Basic Helping Skills</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course</td>
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<td>FORS 3172. Australia's Terrestrial Environment</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3173. ACCT 3201 Cost Accounting</td>
<td>(1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FORS 3173. Environmental Effects</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<td>FORS 3174. ACCT 3110 Accounting Information Systems</td>
<td>(1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.</td>
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<td>FORS 3174. Hist 3462, History of Modern Japan</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<td>FORS 3175. HLTH 3990 Holistic Health the Hawaiian Way</td>
<td>(3 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program. Required consent from the International Education Office.</td>
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<tr>
<td>FORS 3175. Social Issues in Contemporary Poland</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3176. HIST 3905 T:City-State and the Italian Renaissance</td>
<td>(3 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3176. Search for Self: Identity in Post War Polish Literature</td>
<td>(1-20 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3176. Hist 3462, History of Modern Japan</td>
<td>(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.</td>
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<tr>
<td>FORS 3177. Hist 3095 T:Holocaust From Origins to Memorialization</td>
<td>(1-20 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
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Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Foreign Studies (FST)

FST 3177. Dynamics of Breakthrough in Eastern Europe. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3178. FR 3040 Language and Culture in France. (3 cr.; A-F or Audit; Periodic Summer)
Taught on site in France. Explore the rich heritage of Montpellier while studying French language, culture, gastronomy, history and politics. Live with a host family to bolster language skills and internalize daily life. Study current issues within France, such as immigration, globalization and identity politics taught by French faculty. prereq: Admitted to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3178. FR 3040 Language and Culture in France. (6 cr.; : A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FST)

FST 3178. History of Eastern & Central Europe 1871-Present. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3179. Nordic Art and Design in Norway and Sweden. (3 cr.; : Student Option; Periodic Summer)
Study abroad course prereq: Minimum 30 credits and 2.5 GPA. Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3179. Architectural Freehand Drawing. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3180. Art 3950, Architecture Studio. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3181. Biological Psychology. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3182. Psy 3520, Introduction to Industrial/Organizational Psychology. (1-20 cr.; : Student Option; Periodic Fall)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3183. Anth 3632, Latin American Cultures. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3184. Marine Science. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3185. Catering for Children with Spec Educ Needs. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3186. Business and Politics in Asia-Pacific Region. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3187. Early Childhood Literacies. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3188. Individual Differences. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3189. Alcohol and Other Drugs. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3190. Introduction to Irish History. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3191. Hist 3333, From Homer to Alexander: Archiac & Classical Greece. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3192. Indigenous Australian Culture. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3193. Indigenous Australian Oral History. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3194. PEP 3500, Facilities Management. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3195. Modern New Zealand 1914 to the Present. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3196. Health and Exercise Organizations. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3197. Engl 3333, Children's Literature: Texts & Contexts. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3198. Psy 3371, Child and Adolescent Psychology. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3199. Educational Psychology. (1-20 cr. [max 1 cr.]; : Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3200. Exploring Sustainability & Culture Abroad. (1-6 cr.; : Student Option; Periodic Spring & Summer)
Taught on site at selected country. Introduces students to fieldwork based experiences in sustainability and community engaged
Foreign Studies (FST)

FST 3200. Field Studies and New Zealand Geology. (3 cr.; A-F or Audit; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3201. Soc 3322, Law and Society. (3 cr.; A-F or Audit; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3202. Educ 3412, the Computer in Education. (3 cr.; A-F or Audit; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3203. Learning in Studies in Society & the Environ. (3 cr.; A-F or Audit; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3204. Women in Britain. (3 cr.; A-F or Audit; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3205. GEOG 3205 Mapping in Belize. (3 cr.; A-F or Audit; Periodic Summer)
Study abroad course; taught on site in Belize. Novice mappers to the geospatially proficient students will be exposed to a meaningful field experience and lab practicum where field data and satellite imagery will be combined to render valuable information about the Maya Gold landscape. Students will utilize Global Positioning System (GPS) and remote sensing techniques to create informative and cartographically derived outputs; a map. Through this international experience, students will be exposed to a unique cultural experience where they will learn what is important to Mayan culture by observing the dynamics of this landscape. Time spent in Belize will expose each student to the eclectic mingling of Mestizo, Mopan and Kekchi Maya, Garifuna, Creoles, Lebanese, East Indian and Chinese peoples. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3205. Phil 3291, Current Social & Political Philosophy. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3206. Design Studio II. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3207. Government-Business Relations. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3209. Ger 3032, German Language Study Abroad II. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3210. Ger 3045, German Culture & Civ Study Abroad I. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3211. Ger 3046, German Culture & Civ Study Abroad II. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3212. Ger 3047, German Culture & Civ Study Abroad III. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3213. Resource Evaluation and Planning. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3214. Mesoamerican History and Culture. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3215. Britain in the 20th Century. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3216. A Literary & Historical Guide to London. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3217. Art 3200, Sculpture II. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3218. Psy 3202, Statistical Methods. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3219. Comparative Management. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad Course prereq: Admission to an approved study abroad program, required consent from the International Education Office.
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3220. Training and Skills Development.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3221. Global Tourism Systems.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3222. Retail Marketing and Distribution.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad Program. Required consent from the International Education Office.

**FST 3223. Engli 3223, Shakespeare.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3224. Comm 3505, Media Communications.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admission to an approved Study Abroad Program. Required consent from the International Education Office.

**FST 3225. Agency and Consultancy Management and Training.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3226. British Broadcasting Today.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3227. International Trade.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3228. History of Spain.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3229. Sports Promotion.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3230. Geol 3210, Geomorphology.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3231. Cultures in Contact: Italia; Contemp Italian Cultures & Society.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3232. Language, Technology and Education.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3233. ChE 3211, Chemical Engineering Laboratory.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3234. Hist 3239, Europe in the Age of Renaissance Reformation.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3235. Art 3100, Painting II.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3236. Icelandic Geology & the New Society.**
(3 cr.; Student Option; Periodic Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3237. Stress Management.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3238. Writ 3110, Advanced Writing: Arts & Letters.**
(1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3239. Jour 3700, Media Law and Ethics.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3240. Economics (Asian Development).**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**Foreign Studies (FORS) **

**FORS 3241. MU 3997 Turkish American Wind Band.**
(1-4 cr.; Student Option; Periodic Spring)
Study abroad prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**Foreign Studies (FST) **

**FORS 3242. MU 3997 University Singers in Denmark and Sweden.**
(1-4 cr.; Student Option; Periodic Spring)
Study abroad prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**Foreign Studies (FORS) **

**FORS 3243. MA 3997 Values & Technology.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FORS 3244. Soc 3901, Social Change and Social Policy.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**FORS 3245. Hist 3095, Spec topic: Hist of Modern Germany.**
(1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.
FST 3246. Literature in Teaching. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3247. Engl 3115, Writing Fiction. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3248. DN 3401, Dance Composition. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3249. Creative Writing and Performance III. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3250. IntS WEN Understanding Britain in the European Context. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3251. Theories of Leisure Management. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3252. Theatre Production Management. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3253. Contemporary Poetry. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3254. Italian Regional Food. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3255. Pol 3651, History of Western Political Thought I. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3256. Built Environment of Florence. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3257. Swedish Politics and Society. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 3258. European Market Integration. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3259. Ger 3400, Culture & Civilization Study Abroad. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3260. European Economic Policies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3261. Hist 3240, Early Modern England 1485-1689. (1-20 cr.; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3262. Vertebrate Animals. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3263. CommB International Mass Communication. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3264. Using Computers in Education. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 3265. Swedish Society and the School System. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 3276. Stat 3611, Intro to Probability & Statistics. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3277. French Internship. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3278. Fr 3031, French Language Study Abroad I. (1-20 cr. [max 40 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3279. Fr 3032, French Language Study Abroad II. (1-20 cr. [max 40 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved study abroad program, required consent from the International Education Office.

FST 3280. Fr 3045, French Culture & Study Abroad I. (1-5 cr. [max 10 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3281. Fr 3047, French Culture & Study Abroad III. (1-5 cr. [max 10 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3282. IntS IE, International Trade. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3283. IntS IE, International Marketing. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3284. Economics II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3285. Roman Britain. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3286. History of Tuscany. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3287. Social Change 311. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3288. Cell Biology 202. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3289. Invertebrate Animals 201. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3290. Art 3922, Graphic Design II. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3291. Cultural Narratives 112. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3292. Sustainable Production & Consumption. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3293. The World of Work. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3294. Art in Central Europe. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3295. Ecology of Natural & Cultural Landscapes. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3296. Pol 3610, Political Economy: An Introduction. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3297. CIT 212, Implications of Modernity. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3298. CIT 311, Modernity and Postmodernity. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3299. CIT 312, Disciplining Postmodernity. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3300. International Education. (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FORS 3301. Amin 3300, Projects in American Indian Studies. (; 1-18 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3301. International Education. (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FORS 3301. Hlth 3500, Environmental Health. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3302. International Education. (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

**Study abroad course prereq:** Admission to an approved study abroad program requires consent from the International Education Office.

**Study abroad course. Prereq:** Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3302. Fall Drugs, Crime and Society.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admitted to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3303. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3303. Historical and Philosophical Aspects of Punishment.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3304. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3304. Criminological Perspectives of Violence.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the Office of International Education.

**Foreign Studies (FORS)**

**FORS 3305. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the Office of International Education.

**Foreign Studies (FST)**

**FST 3305. Spring Drugs, Crime and Society.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3306. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3306. Fall Introduction to Anthropology.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3307. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3307. Spring Introduction to Anthropology.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3308. International Education.** (; 1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3308. Representations of Women in Popular Culture.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3309. International Education.** (; 1-20 cr.; Student Option; Periodic Fall & Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3309. Electronic Commerce: Marketing Channels Decisions.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3310. Math 3299, Intermediate Analysis.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3311. Art 3810, Art in Elementary Education.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

**FORS 3312. 20th Century British Fiction.** (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**Foreign Studies (FST)**

**FST 3313. HIST 3313 Global Surf Culture - Study Abroad.** (4 cr.; A-F or Audit; Every Summer)
Taught abroad. Surfing is one of the world's most popular cultural phenomena. Students will explore the intersections of surfing, war, and tourism, addressing how a pastime commonly associated with mindless pleasure has in fact been implicated in some of the major global developments of the last two-hundred years. These include empire-building and the "civilizing mission" in nineteenth- and early-twentieth-century Hawai'i, modernization and economic development in the so-called Third World, the growth of international tourism following the Second World War, political mass movements and the anti-apartheid struggle, American foreign relations and Cold War cultural diplomacy, and the surf industry and corporate globalization. As a class taught in another country, the course will also cover the history of U.S. foreign policy in that region. And it has an experiential component: to develop an appreciation for the subject and for why millions of people have planned their lives around the sport, students will learn to surf. The course will thus combine academic instruction with outdoor education. pre-req: instructor consent, ability to swim; also visit the UMD Study Abroad office.

**Foreign Studies (FORS)**

**FORS 3313. Fr 3046, Fr Cult, Study Abbr II.** (1-5 cr. [max 10 cr.]; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3314. Fr 3048, French Culture and Study Abroad IV. (1-5 cr. [max 10 cr.]; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3315. Finance Group C Bank Lending. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3316. Marketing Group B Sports Marketing. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3317. FMIS 3228, Electronic Commerce. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3318. MIS Group B Web Design Applications. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3319. Field Based e-Business Project. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3320. Engl 3564, American Literature II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3321. Writ 3130, Advanced Writing: Engineering. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3322. Ger 3406, German Literature Romantics (1800) to Modern Era (1965). (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3323. IntS WEN Government and Politics of Western Europe. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3324. Ger 3405, German Literature until 1832. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3325. Creative Writing. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3326. Soc 3324, Sociology of Criminal Law. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3327. Soc 3960, Sociology of Sport. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3328. Mu 3601, Elementary School Music Teaching. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3329. Image of Italy in British and American Writers. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3330. Swedish Politics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3331. Christianity and Politics in the Modern World II. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3332. Sociology of Communication. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3333. Indigenous Australia. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3334. Australia: Land and Nation. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3335. Writ 3121, Advanced Business and Organizational Writing. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3336. European Union Economies. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3337. Pathophysiology and Pharmacology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3338. The Frontier and American Literature. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3339. Cultures, Identities, Texts III. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3340. Comm 3200, Interpersonal Communication Theory. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3341. Comm 3211, Communication and Technology in the Information Age. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3342. Communication and Organizational Relationships. (1-20 cr.; Student Option; Periodic Fall & Spring)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>FST 3343</td>
<td>Media Studies 210 The Australian Media.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3344</td>
<td>Span 3044, Spanish Civilization and Culture.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3345</td>
<td>Psy 3081, History and Systems of Psychology.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3346</td>
<td>European Travel and Tourism.</td>
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<tr>
<td>FST 3347</td>
<td>CS 3121, Interactive Multimedia Technology.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3348</td>
<td>CS 3211, Database System Concepts.</td>
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<tr>
<td>FST 3349</td>
<td>Journalism 3401, Broadcast News Writing.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3350</td>
<td>Fine Arts Study - Palermo, Italy.</td>
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<tr>
<td>FST 3351</td>
<td>Journalism - Television News.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<td>FST 3352</td>
<td>Organizational Psychology Across Cultures.</td>
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<td>FST 3353</td>
<td>Crime in International Context.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3354</td>
<td>Psy 3996, Preprofessional Field Placement.</td>
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<td>FST 3355</td>
<td>ArtH3360 European Art in an Age of Revolution.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<tr>
<td>FST 3356</td>
<td>Professional Communication Theory &amp; Management.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<td>FST 3357</td>
<td>Public Relations Practice I.</td>
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<td>FST 3358</td>
<td>FMIS 3612, Managerial Finance.</td>
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<td>FST 3359</td>
<td>FMIS 3644, Investment Fundamentals.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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<td>FST 3360</td>
<td>Grassroots Development Internship.</td>
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<td>FST 3361</td>
<td>Case Studies in Intnational Development.</td>
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<td>FST 3362</td>
<td>Applied Field Methods.</td>
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<td>FST 3363</td>
<td>Directed Research.</td>
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<td>FST 3364</td>
<td>Hlst 3505, Colloquium for Majors.</td>
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<td>FST 3365</td>
<td>Community Health Practicum.</td>
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<td>FST 3366</td>
<td>Australia and the Southwest Pacific.</td>
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<td>FST 3367</td>
<td>Engl 3563, American Literature I.</td>
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<td>FST 3368</td>
<td>Engl 3906, Methods of Literary Study.</td>
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<td>FST 3369</td>
<td>New Literatures in English I.</td>
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<tr>
<td>FST 3370</td>
<td>Society, Culture and the Environment.</td>
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<td>FST 3371</td>
<td>Blaw 2001, The Legal Environment.</td>
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<tr>
<td>FST 3372</td>
<td>Span 3042, Hispanic American Civilization and Culture.</td>
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<tr>
<td>FST 3373</td>
<td>MgtS 3397, LSBE Internship.</td>
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<tr>
<td>FST 3374</td>
<td>Sexology.</td>
<td>(1-20 cr.; Student Option; Periodic Fall &amp; Spring)</td>
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Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
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FST 3410. History of Salvery in Latin America. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3411. Cultural Anthropology of the Mediterranean. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3412. German 3048, German Culture and Civilization Study Abroad IV. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3413. International Communication. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3414. Public Relations and Applied Communication. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3415. Corporate Finance. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3416. Pol 3457, Understanding Terrorism and the Terrorist Threat to America. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3417. International Human Rights Law. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3418. International Human Rights II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3419. Art 3500, Jewelry and Metals II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3420. FMIS 3397, LSBE Internship. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3421. Econ of Spain and the European Union. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3422. Spanish-English Translation. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3423. CC 3110, Sport Science for Coaches. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3424. Making Australia: The Struggle for a Nation 1850-1901. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3425. Hist 3245, Early Modern England 1485-1689: Honors. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3426. Che 3241, Principle of Particle Technology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3427. HRMgtGroupB Human Resource Mgmt II. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3428. Pol 3570, Third World Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3429. Directed Research-Ecology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3430. Wildlife Ecology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3431. Techniques of Wildlife Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3432. Physical Chemistry. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3433. Environmental Science. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3434. Environmental Policy, Socioeconomic Values. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3435. Hist 3463, History of Modern China. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3436. Peruvian Art, History and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3437. War and Peace in Bosnia. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3438. Math 3280, Differential Equations with Linear Algebra. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3439. Hist 3726, Modern Middle East: 18th Century-Present. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3440. Introduction to Studio Practice II. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3441. Peoples of the Pacific. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3442. Math 3355, Discrete Mathematics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office
FST 3443. Human Res Mgmt: Theory and Application. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3444. Project Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3445. Media Law. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3446. European Media & European Audiences. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3447. Personality and Individual Differences. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3448. Cross Cultural Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3449. Group Facilitation. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3450. Psy 3215, Human Sexuality. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3451. ECE 3151, Control Systems. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3452. Arth 3331, European Architecture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3453. ECE 3445, Electromagnetic Fields. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3454. History Seminar: Modern Ireland. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3455. Britain Transformed. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3456. Civil Wars, 1500-2000. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3457. Chem 3322, Biochemistry. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3458. Chem 3324, Biochemistry Laboratory. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3459. Soc 3306, Deviance, Welfare and Justic. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3460. The Bible and its Interpretation. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3461. Econ 3150, Development Economics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3462. Business Analysis and Valuation. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3463. Understanding Enviromental Issues. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3464. Tourism Economics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3465. Operations Research. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3466. Violence in New Zealand. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 3480. ESAT 3300, Human Biomechanics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3481. Screen, Spirituality and Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3482. Popular Fiction and Mass Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3483. CST 3050, Utopian Images. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3484. Australia: Dreamtime to Dust. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3485. Natural History of Norway. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3486. Education in Natural Landscapes. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3487. Medical Microbiology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3488. Introductory Computing for Teachers. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3489. Painting Live Model/Still Life. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3490. Culture and Civilization of Australia. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3491. Population Health-Health Issues & Determinants. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3492. Hlth 3202, Drug Education. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3493. Hlth 3101, Community Health. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3494. Movement Science. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3495. Physiotherapy Practice. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3496. Comm 3116, Professional Communication. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3497. Gender at Work. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3498. Oceania: Australia, New Zealand & the Pacific. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3499. Intro to Forest Protection in Finland. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3500. Tropical Forestry. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3501. Field Courses in Winter Ecology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3502. Ecology of East Africa. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3503. Sustainable Baltic Region. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3504. The Baltic Sea Environment. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3505. Regional Geography and Pacific Islands Region. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3506. Introductory Individual and Social Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3507. Psychological Measurement. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3508. HPER 3100, Risk Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3509. EnEd 3310, Outdoor Leadership. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3510. Contemp China: People's Rep, Hong Kong, Taiwan. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3511. Choral Ensemble in Germany. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 3511. Independent Study in Pharmacy. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3513. Geol 3100, Earth's Climate and Environ: Past and Future. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3514. Writ 3100, Advanced Writing: Lang and Lit. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 3515. Encounters in Aotearoa: Maori and Pakeha. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3516. Chinese History and Social Institutions II. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3517. Introduction to Methods and Theories of History. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3518. Phil 3281, Ethical Theory. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3519. WS 3891, Independent Study. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3520. Pol 3197, Nongovernmental Internship. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3521. Hlth 3118, Women’s Health Issues. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3522. Historical Cultural Geography of Ireland. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3523. Geography of Spain. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3524. Marine Biology and Monitoring. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-

FST 3525. Applied Freshwater Ecology. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3526. Post War British Popular Culture. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3527. The Dead Sea Scrolls. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3528. Leadership in Sport and Leisure. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3529. The British Gothic Novel. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3530. Psy 3527, Psychology and Social Responsibility. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3531. Scottish Culture Colloquium. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3532. Historiography II. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3533. Intro to Methods and Theories of History II. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3534. Sports Culture: “You’ll Never Walk Alone”. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3535. Case Studies in Empire: India and Africa 1857-1964. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3536. Deviancy, Identity and Childhood in 20th C. Britain. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3537. Nineteenth Century Australian Literature. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3538. Introduction to Theatre History. (1-15 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3539. Motivational Psychology. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3540. Field Study. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3541. Art History I. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3542. Chinese Literature. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3543. Art Studio Course. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3544. Marketing Strategy. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3545. Design Management. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3546. European Marketing & Strategy. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3547. History of Modern Poland. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3548. History of Colonial Latin America. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3549. Field Research Project-Geography. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3550. Flamenco: It’s History and Geography. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 3551. Exploration of Brit Environ Hist II. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3552. Social Work Practice Contexts. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3553. Child Care and Protection Practice. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3554. Ger 3591, Independent Study. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3555. Family and Child Welfare I. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3556. Human Growth and Development. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3557. Soci Policy, Soc Exclusion and Anti-Oppressive Practice. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3558. Social Work Settings I. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3559. Psy 3211, Group Dynamics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3560. History of Post-War France. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3561. History Seminar: Themes in Irish History. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3562. History of the Irish Famine. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3563. Modern Paris-French Revolution to Present. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3564. Population and Community Dynamics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3565. Biol 3701, Animal Diversity. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3566. Biol 3994, Undergraduate Research. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3567. Biol 3863, Ecosystems Ecology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3568. Biol 3684, Ecosystems Ecology Lab. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3569. Conservation Biology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3570. Topic in the Anthropology of Australia. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3571. Human Rights Movement. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3572. Australia Art History,Contemporary Art & Society. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3573. Australian Cinema-Representation and Identity. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office. prereq: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FORS)

FORS 3574. WS 3896 International Fieldwork in Women's Studies. (3 cr. [max 6 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Travel abroad with an instructor. Live with local families and learn about local women's lives through field work involving community visits, presentations by grassroots women, community-service work, reading, and follow-up writing and discussion. Repeatable once, in two different geographical areas. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3575. Reinventing Berlin:Cinema,History and more 1895-2005. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3576. The Idea of Latin America. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3577. Britain and Ireland from Cromwell to DeValera. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3578. Volcanology:Taking the Pulse of Etna. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Accredit to an approved study abroad program, required consent from the International Education Office

FST 3579. Italian Literature: Sicilian Writers. (1-20 cr.; Student Option; Every Fall & Spring)
Foreign Studies (FORS)

FST 3580. The Emergence of Modern Europe, 1598-1789. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3581. International Business Environment. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3582. Contemp French Phil: Multiple Dimensions of Difference. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3583. Paris Collage: History, Culture, Architecture. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3584. Catalan Cultural Studies. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3585. Social Life/ Med & Early Modern Italy. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3586. Mu 3991, Independent Study. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3587. Mu 3201, Music History I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3588. Mu 3202, Music History II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3589. Integration of Swedish Music Education. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3590. Regional Geography. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FORS) 1. Hlth 3991 Independent Study. (1-20 cr.; Student Option; Periodic Summer)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FST 3591. The Mediterranean Environment. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3592. European Business Environment. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3593. Regional Australian Society and Environment. (1-20 cr.; Student Option; Periodic Spring)
Study abroad course. Prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3594. Exchange in United Kingdom. (1-30 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 3595. Interactive/Internet Marketing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3596. Advertising Communication and Creativity. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3597. Management Across Borders- A Scandinavian Perspective. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3598. European Management. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3599. English Language Teaching Asst Program. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3600. Communicating the Past: History and Film. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3601. Psychology-Abilities. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3602. Psychology - Human Factors. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3603. American Culture and Society. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3604. Business and Politics in the Asia Pacific Region. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3605. Race and Ethnicity. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3606. Anthropology in a Globalising World. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 3607. Ethnicity. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3608. Exploring the Past. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3609. Kinship and the Family in Cross Cultural Perspective. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3610. Relationship Marketing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3611. Examining the Self. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3612. From Stonehenge. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3613. Great Minds of the Renaissance. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3614. History of London. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3615. International Marketing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3616. Promised Lands: U.S. Romantic Nationalism and Intl Hegemony. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3617. The Venice Film Festival. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3618. Intro to Communication and Cultural Studies. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3619. Television Cultures. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3620. Geohazards. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3621. Gender Issues in Psychology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3622. Forensic Psychology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3623. Psychology and the Internet. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3624. Medieval Literature: An Intro. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3625. Fr 3045, French Culture and Civilization Study Abroad I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3626. Fr 3046, French Culture and Civilization Study Abroad II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3627. Fr 3047, French Culture and Civilization Study Abroad III. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3628. Fr 3048, French Culture and Civilization Study Abroad IV. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3629. Fr 3031, French Language Study Abroad I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3630. Fr 3032, French Language Study Abroad II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3631. Art 3625, Photography II: Digital. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3632. Art 3320, Ancient Art. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3633. Painting & Sculpture in Italy - 13th and 15th Century. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3634. Irish Historical Tales. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3635. Football Cultures and Identities. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3636. Symbolic Anthropology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3637. Feminism and Anthropology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3638. Aspects of Irish Folklore. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3639. Arab Society. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3640. Anth 3636, Anthropology of India. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3641. Swedish Literature. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3642. Culture and Emotion. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3643. Rec 3327, Large Event Management. (1-20 cr.; Student Option; Every Fall & Spring)
FST 3644. Revolutionary Ideas in the XVII Century. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3645. Jazz in Europe. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3646. Visualism and Anthropology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3647. Anthropology of Media. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3648. Eating Disorders. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3649. Photographic Practices II. (0 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3650. History of 20th Century Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3651. Visual Travel Journals. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3652. Marketing the Arts. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3653. New Zealand Histories: 1200 to the Present. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3654. Twentieth Century World History. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3655. The Practice of Teaching. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3656. International Mediascapes. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3657. Media Audiences. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3658. Australian Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3659. Span 3042, Hispanic American Civilization and Culture. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3660. Organisational Behaviour. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3661. Australian Perspective: Maps, Dreams, History. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3662. Australian Studies: Cultures & Identities. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3663. Engineering Project Management. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3664. Sociology and Globalization. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3665. Art Analysis I: What is Modern Art?. (1-20 cr.; S-N only; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3666. Lang 3091, Directed Study. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3667. Popular Music and Identity. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3668. Victorian Sexualities. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3669. American Postmodernism. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3670. Psychology. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3671. Sweden’s Social and Economic Geography. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3672. Introduction to Anglo-Irish Literature. (1-20 cr.; No Grade Associated; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3673. Introduction to Aboriginal Australia. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3674. Cultural Analysis with Field Work. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3675. Introduction to Aboriginal Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3676. Australian Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prerequisite: Admitted to an approved study abroad program, required consent from the International Education Office.
FST 3677. Introduction to Indigenous Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3678. Defining Australia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3679. Australian Society and Culture. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3680. Australian Studies III. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3681. Heritage Studies III. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3682. Australia and Asia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3683. An Introduction to Contemporary Northern Irish Society. (1-20 cr.; Student Option: Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3684. The Social Structure of Modern Ireland. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3685. Maori Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3686. Traditional Aboriginal Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3687. Australian Perspective. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3688. Introduction to Japanese Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3689. British Archaeology-Techniques & Chronology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3690. Colloquium in British Culture & Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3691. Australia Today. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3692. Australia: Interpreting the Past. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3693. Aboriginal Land Tenure & Sacred Sites. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3694. Understanding Contemporary Irish Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3695. Australian Society & Culture for International Students. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3696. Aboriginal Encounters: Conflict and Accommodation. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3697. Australia and Intercultural Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3698. Perspectives on Australia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3699. Austrian Civilization. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FST 3700. Italian Life and Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office

FORS 3701. ART 3700 Drawing II. (3 cr.; Student Option; Periodic Summer) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3702. ART 3700 Drawing II. (3 cr.; Student Option; Periodic Summer) Study abroad course Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3704. The Peopling of Polynesia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3705. Cultures of Cities. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3706. Mediterranean Anthropology: Cultural and Social. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.
FST 3707. Australian Culture in the Int'l Perspective. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3708. Intro Trad & Contemp Maori Soc. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3709. The Contemp Pac: Soc in Change. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3710. Introduction to East Asia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3711. Intro to Australian Indigenous Studies. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3712. The Essential Australia. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad program. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3713. Music in You. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3714. Independent Study. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3715. Intermediate Strategic Decisions. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3716. International Economics-Orebro. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3717. ArtH 3340, Broque and Rococo Art. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3718. IE 3105, Human Factors. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3719. Elderly in the Modern Society. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3720. Anthropology: Cultural Contexts of Crime. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3721. Social Work in an Intercultural Perspective. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3722. Engineering Mathematics. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3723. Consumer Behavior. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3724. Advertising Theory and Practice. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3725. E-Marketing Strategies. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3726. Sociology of the Family: Changes and Challenges. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3727. Econ 3402, Global Economic Issues. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3728. Culture, Ethnicity, and Psychology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3729. Community Psychology in Aotearoa. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3730. Geol 3420, Sedimentology and Stratigraphy. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3731. War and Religion. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3732. City of Florence-History of Italian Art from Antiquity to the Baroque. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3733. Engineering Mathematics I. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3734. Industrial Britain. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 3735. Ed 3331 Children's Literature and Integrated Creative Arts. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3736. Multiliteracies: Designs for Learning. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq-Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 3737. Principles of Environmental Planning. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3738. Globalization: Power, Networks and Identity in the New World Order. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3739. PEP 3126 Elementary School Physical Education. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3740. Masters of Architecture. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3741. Museums and Galleries of London: The Cultures of Display. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3742. Geog 3401, Weather and Climate. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3743. Advertising Creative: Introduction. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3744. Applied Media Communication. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3745. Personal and Professional Development. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3746. Jour 3001, Report and Writing II. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3747. Programs Aimed to Fight Poverty and Social Exclusion in the EU. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3748. Understanding the European Economy. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3749. Psy 3215 Topics in Human Sexuality. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3750. Advanced Physical Chemistry. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3751. Historical Methodologies. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3752. Archaeozoology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3753. Sports Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3754. Quantitative Analysis. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3755. Maori Society and Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad Course Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3756. Argentine History-Modern Argentina: Politics, Culture, Society. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3757. Nationalism and Genocide in 20th Century Europe. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3758. Writ 3220 Visual Rhetoric and Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3759. Psychoanalysis and Existential Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3760. Fr 3302, Advanced French Composition and Conversation. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3761. BIOL 3761 Marine Biology in New Zealand. (4 cr.; Student Option; Periodic Summer) Study abroad in New Zealand. Introduction to the marine environment by visiting International marine lab and conducting both laboratory and field research. Topics include ecology, animal physiology, animal behavior, ichthyology and fisheries biology. Lectures will precede daily field trips where students will make in situ measurements and/or bring specimens back to the laboratory for study. pre-req: Admission to an approved study abroad program requires consent from the International Programs and Services Office.

FST 3761. Mktg 3781, International Marketing. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3762. Food and Nutrition Systems. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3763. Re-Thinking Women, Sex and Gender. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3764. Comparative Economic Systems.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3765. Architecture, Painting in Barcelona.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad course. Required consent from the International Education Office.

**FST 3766. Spanish Art.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad course. Required consent from the International Education Office.

**FST 3767. Soc 3821, Sociology of Community.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3768. Politics, Politicians, and the Media.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3769. Welfare Policy in Sweden.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3770. Sociocultural Theory with Applications.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3771. Cultural Analysis Field Work.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3772. The Law of Sustainable Development.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3773. ECh 3006, Early School Years.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3774. The Learning of Primary Mathematics.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3775. The Child and the Family in the Community.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3776. Comm 3215, Conflict Management.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3777. Study Abroad: In-country.** (1-20 cr.; Student Option; Every Fall)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3778. Contemporary Social Theory.** (1-20 cr.; Student Option; Every Fall)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3779. History of Art.** (1-20 cr.; Student Option; Every Fall & Spring)
Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3780. Mediterranean Societies.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3781. The City, Families and Lifestyle in Renaissance Florence.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3782. The Spain of Franco.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3783. Aspects of Film Theory.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3784. Australian People: Indigenous, Anthropological Perspectives.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3785. Environmental Analysis.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3786. Applied Agroforestry.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3787. New Zealand History and Geography.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3788. Services Marketing III.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3789. Life Drawing.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3790. Landscape Painting.** (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3791. WS 3400, Women and Film.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3792. Eco-Recreation Interpretation.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 3793. Biol 3601, Plant Diversity.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.
FST 3794. Marine Invertebrates. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3795. Vertebrate Biology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3796. Marketing and Audience Research. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3797. American Media. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad course. Required consent from the International Education Office.

FST 3798. Comm 3510, Ethics in Human Communications. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3799. Psy 3999, Directed Instruction. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 3801. Geographical Information Systems. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3802. Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3803. Pol 3511, Politics of South Asia. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3804. Economics of Leisure and Tourism. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad program. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3805. Renaissance to Revolution, Scotland 1513-1689. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3801. ARTH 3150 Contempory Global Exhibitions. (3 cr.; A-F or Audit; Periodic Summer) Study abroad course. This class will examine the transformation of art worlds and urban spaces by the development of contemporary global exhibitions, such as various Art Biennales now held around the globe, Art Basel, Documenta, and the Sculpture Projects Munster. In particular, we will examine how such exhibitions, as well as globalization in general, have transformed the way art is created, distributed, and received. pre-req: Admission to an approved study abroad program requires consent from the International Programs and Services Office.

FORS 3802. ART 3812 Nordic Art and Design in Sweden and Denmark. (1-20 cr.; Student Option; Periodic Summer) In this study abroad trip to Sweden and Denmark, students will explore a variety of artistic styles, media, practices, traditions, and innovations in Nordic Art from medieval to contemporary times. pre-req: minimum 30 credits, GPA of 2.5 or higher, department consent of Office of International Programs and Services.

Foreign Studies (FORS)

FORS 3803. POL 3511, Politics of South Asia. (1-20 cr.; Student Option; Periodic Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3804. Economics of Leisure and Tourism. (1-20 cr.; Student Option; Periodic Summer) Study abroad program. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3805. Renaissance to Revolution, Scotland 1513-1689. (1-20 cr.; Student Option; Periodic Summer) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3806. Australian Historical Studies. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3807. Educ 3412, The Computer in Education. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3808. Financial Markets. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3809. Contemporary Austrian Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3810. Interpersonal Practice. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FORS 3811. Science and Forestry. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3812. ART 3812 Nordic Art and Design in Sweden and Denmark. (1-20 cr.; Student Option; Periodic Summer) In this study abroad trip to Sweden and Denmark, students will explore a variety of artistic styles, media, practices, traditions, and innovations in Nordic Art from medieval to contemporary times. pre-req: minimum 30 credits, GPA of 2.5 or higher, department consent of Office of International Programs and Services.

FORS 3813. Ger 3302, Advanced Composition and Conversation. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 3814. Ger 3403, German Poetry and Theater. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3815. Democratization in the World. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3816. PE 3495, History and Culture World’s Game. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3817. Interior Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3818. Ethical Tolerance in Amsterdam. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3819. Art 3715, Figure Drawing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3820. Language, Society, and Identity in Europe. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3821. Internship. (1-20 cr.; Student Option; Every Fall)
Study abroad course. Prereq-Admission to an approved study abroad course. Required consent from the International Education Office.

FST 3822. Comm 3116, Professional Communication. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3823. Popular Culture and Media Theory. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3824. Television: Medium, Narrative and Audience. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3825. Ethnicity, Racism and Communication. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3826. Australia: An Introductory History. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3827. Historical Projection of Three Cultures. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3828. Environmental Impact and Social Development. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3829. Introduction to Marine Biology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3830. Introduction to Tropical Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3831. Global Urbanization. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3832. Sport Marketing II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3833. Corporate Culture. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.
FST 3844. Understanding Healthcare in Europe. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3845. Selected Topics in International Politics. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3846. Introduction to Culture and Society. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3847. Criminology and Criminal Justice. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3848. Global Studies. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3849. Phonetics II. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3850. Rhythm and Intonation II. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3851. Phonetics I. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3852. Rhythm and Intonation I. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3853. Literary and Cultural Studies. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3854. Honors Study in Greece: Classical Foundations of Western Culture. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3855. The Roman Empire. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3856. History and Politics of Modern Italy. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3857. Introduction to Poetry. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3858. Social Communication. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3859. Individuals and Identities. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3860. Fashion Marketing. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3861. Fashion Show Production. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3862. Business Communication. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3863. London Experience in Literature. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3864. 1st World War. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3865. Soc 3156, Qualitative Research Methods and Analysis. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3866. Soc 3328 Delinquency and Juvenile Justice. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3867. Soc 3342, Law Enforcement Administration. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3868. Soc 3363, Correctional Agency Administration. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3869. Sport and Leisure Industry in Aoteroa/New Zealand. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad course requires consent from the International Education Office.

FST 3870. From Revolutionary Soldaderas to Frida Kahlo: Gender, Sexuality, Politics, and the Arts in Mexico. (1-20 cr. ; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3871. Th 3871, Playwriting. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study Abroad Course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3872. Writing Irish, Writing Scottish. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3873. Great Works of Italian Literature. (1-20 cr. ; Student Option; Periodic Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.
FST 3874. Biol 3703, Animal Physiology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3875. Pol 3403, American Foreign Policy. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3876. Sociology of Mental Health. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3877. Sociology of Religion. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3878. History of London. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3879. Mental Health in a Global Context. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3880. Italian Culture. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3881. Communication in Support of Third World Development. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3882. Social Scientific Foundations of Communication. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3883. Comm 2202, Introduction to Organizational Communication. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3884. Comm 3203, Communication and Social Environment of the Internet. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3885. Comm 3605, Public Relations. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3886. Sweden and the Swedish Way of Life. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3887. Cross-Cultural Psychology: At Home and Abroad in Italy and Greece. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3888. Family, Gender, and Sexuality in Contemporary Australia. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3889. Language, Culture and Society of Costa Rica. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3890. Directed Research. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3891. Natural Resource Management. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3892. Economic and Ethical Issues in Sustainable Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3893. Tropical Ecology and Sustainable Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3894. SPAN 3894 Language and Culture in Spain. (6 cr.; Student Option; Periodic Summer) Month long summer study abroad program in Salamanca, Spain. Study of Spanish language, literature, art history and culture at the University of Salamanca. Home stay with a Salamanca family. Taught in Spanish. Prereq-Admission to an approved study abroad program by the International Education Office. Student must have completed SPAN 1202 or higher or received instructor consent.

FST 3895. The Fatal Shore: Aborigines, Immigrants, and Convict Society. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3896. Child Social Development. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3897. Mental Health in a Global Context. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3898. Health and Clinical Psychology. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3899. Antisocial Behavior. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3900. Creative Leadership Skills. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3904. International Law. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3905. Spanish and English Voices of the Civil War in Literature, Film, and Drama. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.
FST 3906. Plant Physiology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad course requires consent from the International Education Office.

FST 3907. Discrimination and Racism: from an anthropological perspective. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3909. The European City. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad course. Required consent from the International Education Office.

FST 3910. Contemporary Italian Cooking. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3911. Biochemistry, Separation of Methods and Analytical Techniques. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3912. Postcolonial Studies I. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3913. Advanced Creative Writing: Travel Writing. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3914. Political and Social Change in Argentina and Latin America. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3915. Comparative History of Argentina and Latin America. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3916. Geohazards. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3917. Culture Shock-Cross Cultural Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3918. Psychology and Women. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3919. Advertising, Branding and Identity.com. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3921. Sociology of Health and Illness. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3922. Human Rights. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3923. European Economic Community. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3924. History of England 20th Century. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3925. Civilization of London. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3926. Writing About Florence. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3927. Food as Sex, Gender, History, and Style: Anthropology and the Origins of Cuisine. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3928. Ethnography of Industrial Life. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3929. Conventions, Festivals and Events Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3930. Positive Psychology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3931. Work Psychology: The Swedish Research Contribution. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3932. Adolescent Behavior. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. Prereq-Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3933. Psychological Aspects of Leadership and Risk Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FST 3934. Psychology and Women. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FST 3935. Game Studies. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FST 3936. International History Since the End of the 19th Century. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FST 3937. 19th and 20th Century Europe. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program requires consent from the International Education Office.

FST 3938. 19th and 20th Century Britain. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission to an approved study abroad program requires consent from the International Education Office.
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3939. African History. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3940. International Communications. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3941. Global Communication I. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3942. Attitudes, Persuasion, Leadership and Conformity. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3943. Gender Communication. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3944. Communication Training and Consultancy. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3945. Screen and Media Studies. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3946. Education, A Comparative View. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3947. Writ 3160, Upper Division Advanced Writing. ( ; 1-20 cr. ; Student Option; Periodic Fall & Spring) Admission to an approved study abroad program. Required consent from the International Education Office. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3948. Organization and Leadership. ( ; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3949. Approaches to Development. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3950. Modernity and Social Relations. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3951. Sociology of Culture. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3952. Culture and Interpersonal Interaction. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3953. Culture, Identity and Social Conflict. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3954. From Arbours to Mausoleums: English Gardens and their Buildings, 1500-2000. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3955. Psy 3381, Adult Development and Aging. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3956. Visual Merchandising. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3957. Personality and Emotional Intelligence. ( ; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3958. Work Psychology: the Swedish Research Contribution. ( ; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3959. Psy 3231, Psychology of Drug Use. ( ; 1-20 cr. ; Student Option; Periodic Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3960. Econ 3311 Money and Banking. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent form the International Education Office.

FST 3961. Europe Since 1945. ( ; 1-20 cr. ; Student Option; Every Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3962. Eastern Christianity. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3963. Survey of Ancient Greek History. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3964. New Literatures (By Research). ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3965. Cultural Tourism. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3966. Immunology II. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3967. Pathology I. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3968. The Archaeology of the Medieval Irish Church. ( ; 1-20 cr. ; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.
FST 3969. The Development of the Castle in Medieval Europe. (1-20 cr.; Student Option; Every Fall & Spring)
study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3970. Warfare in the 20th Century. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3971. Visual Learning. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3972. Te Ara Pou-Leadership. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3973. Business Negotiations in Central and Eastern Europe. (1-20 cr.; Student Option; Every Fall & Spring)
study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3974. Tropical Ecology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

FST 3975. Introduction to Business Law. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3976. Business Issues in Arab World. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3977. Hitler, Nazism and the Second World War. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 3978. European Cultures. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3979. Religion, Society and Politics in the Arab World. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3980. Kin, Class, and Caste. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3981. Geog 3762, Geography of Europe. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 3982. Tourism Impacts. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3983. Australian Studies. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3984. Architecture and Painting in Madrid. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3985. Global and Local Sustainable Living. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3986. Applications and Practices of Sustainable Living Internship. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3987. Environmental Education. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3988. Introduction to Applied Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3989. Training For Adventure Sports. (0-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3990. Mountaineering. (0-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3991. Sport Facility and Planning. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3992. Concepts of Sport & Leisure. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3993. Comm 3210 Group Communication. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3994. Pol 3457, Understanding Terrorism and the Terrorist Threat to America. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 3995. Anth 3622 Prehistoric Archaeology: Old World. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3996. Organizational Behavior. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 3997. Contemporary Spain: History, Politics and Society. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3998. Sex, Lies, Ninjas and the Man Who Built the Great Wall: Story of China's First Emperor. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 4000. Northern Ireland: Cultural Immersion Experience. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved Study Abroad program. Required consent from the International Education Office.

FORS 4001. EDUC 4301 Education System in South Korea. (3 cr.; Student Option; Periodic Summer)
Study abroad course prereq: No grad credit. Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 4001. Special Topics: (Various Titles to be Assigned). (1-15 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 4002. INTB 4495 International Business Down Under. (3 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 4002. Special Topics: (Various Titles to be Assigned). (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4003. Acct 4505, International Accounting. (1-20 cr.; max 12 cr. ; Student Option: Every Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4004. Art 4892, Independent International Study. (1-20 cr.; max 12 cr.; Student Option: Every Fall & Spring)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4005. Biol 4801, Evolution. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4006. COMM 4949, Intercultural Hawaiian Experience. (4 cr. [max 12 cr.] ; S-N or Audit; Every Spring)
Taught on site in Hawaii. Practice of intercultural communication at culturally diverse sites. Students will immerse themselves in Non-European/American cultures and participate in intercultural communication with members of those cultures. Offered at various sites within the U.S. and internationally. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office; no grad credit.

FST 4007. Th 4801, History of Theatre I. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4008. Th 4802, History of Theatre II. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4009. Anth 4628, Language and Culture. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4010. EdSe 4501, Educational Psychology. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4011. Soc 4862, Technology and Society. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4012. IE 4801, International Engineering Report. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4013. IE 4803, Simulation of Swedish. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4014. IE 4812, Computer Integrated Manufacturing. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4015. IE 4823, Project Management and Swedish Industrial Design Project. (1-20 cr.; max 1 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 4025. MgtS 4841, Training and Development. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4026. MgtS 4481, Strategic Management. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4027. MgtS 4711, Business to Business Marketing. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4028. MgtS 4721, Advertising and Marketing Comm. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4029. MgtS 4781, Marketing Management and Strategies. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4030. ECh 4600, Student Teaching in Early Childhood/Primary. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4031. MgtS 4472, Entrepreneurship. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4032. Econ 4991, Independent Study. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4033. MgtS 4411, Organizational Studies. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4034. MgtS 4431, Leadership. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4035. Comm 4399, Directed Projects in Communication. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4036. Math 4326, Linear Algebra. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4037. Mgt A or B International Management. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4038. Mgt A or B International Management. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4039. Che 4621, Particle Technology. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4040. EIE 4600, Student Teaching. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4041. EIE 4650, Student Teaching Individual Subjects:K-8. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4042. Soc 4949, Race and Ethnic Relations. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4043. International Management. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4044. Comm 4397, Internship in Communication. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4045. FMIS 4617, Mgmt of Financial Institution. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4046. ArtH 4491, Directed Study 19-20 Cent European Art. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4047. Span 4011, Hispanic American Prose. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4048. Span 4022, Medieval and Golden Age Spain. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4049. Psy 4500, Health Psychology. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4050. EdSe 4600, Student Teaching. (; 1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4051. Art 4700, Drawing III. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4052. Art 4950, Architecture Capstone/Portfolio. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4084. Art 4976, Publication Services. ( ; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4085. Ethnographic Field School in Ecuador. ( ; 1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4086. Educ 4991, Independent Study. ( ; 1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4087. Art 4691, Individual Study in Photography. ( ; 1-20 cr.; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to a Study Abroad Program, required consent from the International Education Office.

FST 4088. Writing Medieval & Early Modern London. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4089. FMIS 4615 Derivative Securities. ( ; 1-20 cr.; Student Option; Periodic Spring) Study abroad course. prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 4090. Business German. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4091. Seminar in German Language and Literature. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4092. Soc 4323, Women and Justice. ( ; 1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4093. Soc 4935, Conflict and Violence. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4094. CS 4531, Software Engineering. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4095. CS 4611, Database Management Systems. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4096. Computer Graphic Media Technology. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4097. Digital Compression or Image and Sound. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4098. Agent Systems. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4099. Software Metrics. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FORS 4100. HLTH 4100 History of Health in Italy. (3 cr.; A-F or Audit; Every Summer) Taught on site in Italy. Investigating the foundations of public and community health using primary historical sites in the area now unified as Italy. Analyze the impact of social and cultural factors on community health from early civilizations through the Renaissance, with emphasis of effects of the Black Death. Examine the role of arts used to convene health information for non-literate populations. Relate to aspects of preventative health care and promoting healthy communities in the present. Study Abroad prereq: Minimum 30 credits, no grad credit; admitted to an approved study abroad program, required consent from the International Education Office.

FST 4101. Mu 4512, Chamber Singers. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4102. ME 4715, Machine Design. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4103. Industrial Design. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4104. Product Development. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4105. Cross-Cultural Perspective on Work. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4106. MSID Country Analysis. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4107. ChE 4613, Air Pollution Control. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4108. MgtS 4461, Business and Society. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4109. Scientific Programming. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4110. Math 4820, Applied Mathematics: Numerical Methods. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4111. Math 4240, Applied Mathematics: Operational Methods. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4112. Math 4230, Applied Mathematics: Complex Variables. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4113. Geog 4451, The Geography of Soils. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4114. ODEs and Calculus of Variations. ( ; 1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 4115. FMIS 4644, Portfolio Management. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4116. Traditional Irish Music I. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4117. Anth 4623, Anthropology & Contemp Human Problems. (1-20 cr.; Student Option; Periodic Fall) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4118. Art 4812, Senior Seminar. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4119. Requirements Engineering. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4120. History of Japanese Modernisation Since 1868. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4121. Span 4013, Hispanic American Poetry & Drama. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4122. Econ 4777, Environmental Economics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4123. Chem 4342, Molecular Biology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4124. Chem 4364, Molecular Biol Laboratory. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4125. Chem 4341, Biochemistry. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4126. Chem 4363, Biochemistry Laboratory. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4127. Art 4400, Ceramics III. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4128. ME Technical Elective. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4129. Ger 4404, Contemporary Germany. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4130. Numerical Methods II. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4131. Soc 4950, International Migration to the U.S.. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4132. CS 4521, Algorithms and Data Structures. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4133. CS 4411, Data Comm and Network Technology. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4134. CS 4412, Research in Exercise Physiology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4135. Applied Field Methods. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4136. Leisure, Sport and the Law. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4137. Plant and Animal Physiology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4138. Advanced Immunology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4139. Biol 4891, Animal Behavior. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4140. Flowering Plants. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4141. ECE 4321, Computer Networks. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4142. Soc 4597, Internship. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4143. ESAT 4700, Research in Exercise Physiology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4144. Renaissance Drama. (1-15 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4145. Value Creating Proc. HR Dev & Knowledge Mgmt. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4146. Pol 4191, Independent Study. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4147. The Irish Short Story. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4148. Tuscany and It's Environment. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4149. Renaissance Prostitution. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4150. Biol 4767, Comparative Anatomy of Vertebrates. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 4151. CS 4821, Computer Security. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
FST 4152. Connectivity Software Technologies. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4153. Econ 4355, Half-Time Internship. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4154. International Business Strategy. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4155. MgtS 4474, International Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4156. Mu 4392, Classical Guitar. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4157. Traditional Irish Music II. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4158. International Health: Global Perspectives. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4159. European Perspective: Hlth, Sco, Econ & Pol Impacts of Health Promotion. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4160. Geol 4335, Physical Volcanology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4161. Th 4801, History of the Theatre I. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4162. Ethnographic Field School. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4163. Introduction to Tourism Management. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4164. Molecular Genetics. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4165. Anth 4640, Medical Anthropology. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4166. Feature Writing. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4167. Design Process. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4168. Biol 4503, General Microbiology offered in Wroclaw, Poland. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4169. Genetics. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course. prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4170. System Design and CFD Simulation. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study Abroad Course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4171. The Welfare State in a Period of Challenge and Change. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4172. Advanced Macroeconomics. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4173. Art 4191, Individual Study in Painting. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4174. Mktg 4721, Advertising and Marketing Communication. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4175. Mktg 4731, Consumer Behavior. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4176. Geol 4240, Physical Hydrogeology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4177. Chem 4434 Inorganic Chemistry. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4178. Chem 4435, Inorganic Chemistry Laboratory. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4179. Biol 4501 General Microbiology. (1-20 cr.; Student Option; Every Fall, Spring & Summer) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4180. Robust Electronic. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 4181. Design and Analysis of Algorithms. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 4182. Programming Language Design Concepts. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4183. Foundations of Computer Science. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4184. Artificial and Machine Intelligence. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4185. Programming Languages. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4186. Web Applications Development. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4187. Jour 4800 Perspectives on International News Reporting and Editing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4188. Supervised Teaching Internship Seminar. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4189. ME 4135, Robotics and Controls. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4190. ME 4145, CAD/CAM. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4191. IE 4235, Manufacturing Systems Integration. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4192. Jour 4001, Specialized Reporting and Writing. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4193. Art 4908, Interactive Design I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4194. Art 4973, Interdisciplinary Team Project. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4195. Art 4905, Design Technology II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4196. Management Concepts. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4197. ArtH 4620, History of Photography. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4198. Geog 4394, Gender, Space and Culture. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4199. Modern Scottish Literature. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4200. Inventing the Modern. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4201. Soc 4860, Environmental Sociology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4202. Cervantes. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4203. Selected Topics in Cultural Anthropology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4204. Advanced Historical Studies. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4205. International Human Resource Management. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4206. Political Economy. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4207. Written Translation from English. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4208. One Hundred Years of Narrative Prose 1870-1970. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4209. Greek Mythology in 20th Century French Literature Oral. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4210. Translation from English. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4211. Greek Mythology in 20th Century French Literature Writing. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

FST 4212. Soc 4981, Social Movements, Protest and Change. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4213. Spanish Intensive Conversation. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4214. Principles of Advertising. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4215. Soc 4340 Minorities, Crime and Justice in the United States. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4216. IntB 4495, International Business in India. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

FST 4217. ME 4495 Sustainable Energy Systems. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 4218. ME 4112 Heat and Mass Transfer. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 4219. ME 4175 Machine Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course requires consent from the International Education Office.

FST 4220. Peace and Development in a Global World. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4221. Art 4040, Introduction to Digital Filmmaking. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4222. Intercultural Competence in Health and Care. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4223. Basic Fermented Beverage Technology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4224. Snow and Ice. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4225. INTB 4201, Chinese Business and Economics. (3 cr.; A-F or Audit; Every Summer)
Taught on site in China. Introduction to Chinese business and economy. Provides fundamental knowledge of Chinese business and economy, provides students with understanding of social, cultural, economic and political environments of doing business in China through lectures, readings, hand-on project and travel to China. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4226. Plant Growth and Development. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4227. Education Tour: England and the United Kingdom. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4228. Automation. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4229. Snow and Ice. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4230. Material Selection and Eco Design. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4231. Econ 4410, International Economics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4232. Global Perspectives on Education. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4233. Anth 4621 Myth and Sacred Symbols. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4234. Global Cities. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 4235. Hthl 4996, Internship in Health Education. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

Foreign Studies (FST)

FST 4236. Writ 4260, Visual Rhetoric and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 4237. Space and Place in World Rhetoric. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4238. Econ 4935 Urban/Regional Economics. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4239. MgtS 4483 Cooperative Strategy and Strategic Alliances. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4240. Engr 4375 Drama. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office. No grad school credit.

FST 4241. ES 4001 Independent Study. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4243. EDUC 4993 Teaching in Korea. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4244. International Perspectives on Teaching and Practicum. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer) Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4245. SPAN 4017 Hispanic American Cinema and Culture. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4246. Internship: Australia/New Zealand. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4247. EDSE 4100 Teaching in a Diverse Society. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4248. International Service Learning. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4249. Comparative Education Systems. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4250. Organizational Culture and Leadership Dynamics. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4251. Contemporary Britain. (1-20 cr.; Student Option; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4252. HCM 4595 T: Families and Healthcare Businesses in Thailand. (1-20 cr.; A-F only; Periodic Fall & Spring) Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4253. CHE 4613 Air Pollution Control. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4254. SPAN 4020 Cinema and Culture of Spain. (1-20 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4255. Independent Study in Studio Art. (1-20 cr.; Student Option; Periodic Summer) Study abroad course. pre-req: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4256. HCM 4595 Health Care in the Netherlands and France. (1-20 cr.; Student Option; Periodic Summer) Study abroad prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office. No graduate credit

FST 4257. MKTG 4781 Marketing Management and Strategy. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4258. INTB 4495 Business Dynamics in Korea and Japan. (1-20 cr.; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4260. Translation from English to Spanish. (1-20 cr.; Student Option; Periodic Fall) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4261. Biology 4802 Evolution. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4262. MKTG 4741 Developing and Marketing New Products. (1-20 cr.; Student Option; Periodic Fall & Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4263. CRIM 4360 Global Perspectives Crime Law and Justice. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4264. ECON 4213 Mathematical Economics. (1-20 cr.; Student Option; Periodic Spring) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 4265. International Financial Market, Institutions. (3 cr.; Student Option; Periodic Fall) Study abroad prereq: No grad credit. Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4266. INTB 4495 Peru's Food Movement: The Links to Health, Development and Branding. (3 cr.; Student Option; Periodic Spring & Summer) Study abroad prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office. No graduate credit

FST 4267. Sustainable Design & Construction. (4 cr.; Student Option; Every Fall) Study Abroad

FST 4295. INTB 4211 Innovation in Ireland (GLOBAL PER). (GLOBAL PER; 3 cr.; A-F only; Every Summer) Taught on site in Ireland. Explore Irish innovation on multiple levels (individual, organizational, and regional) concentrating on how Ireland has created a culture of innovation.
and the consequences of this innovation on its people from its earliest history to today.
prereq: Minimum 2.8 GPA, minimum 60 credits, admission to an approved study abroad program by the International Education Office.

Foreign Studies (FORS)

FORS 4300. FORS 4300 - ENGL 4300 TH 4300 Theatre History in England. (4 cr.; A-F or Audit; Every Summer)
Taught on site in England. This short-term study-abroad course provides an experiential exploration of theatre history and dramatic performance in England, grounded in a study of literary and cultural context of the plays. We will begin our work in Duluth with a two-week, on-line coursework, in which we will be introduced to, discuss, and analyze the plays we’ll be seeing abroad. The second phase of our experience will begin in London with the viewing of professional production of history plays performed by premier theatre companies like the National Theatre. Our journey will continue to Chester (to explore the remains of Roman theatres), York (where the city still produces its mediaeval plays) and Stratford-upon-Avon (where we will explore the Shakespeare’s birthplace and see performances by the Royal Shakespeare Company). Returning to London we will become grounded in the reconstructed Globe for which Shakespeare’s dramas were written, and experience the playhouses (such as the Haymarket, the Almedia, and the Donmar) that remain alive with theatrical activity today. More than an introduction to various theatrical eras and styles, this course will allow you to explore theatre culture, beyond the reading of play scripts, through architecture and artifacts, as well as live performances. Supplementing our study of historic traditions, we will also explore the contemporary theatre scene in one of the most exciting theatre capitols of the world. pre-req: instructor consent.

Foreign Studies (FST)

FST 4365. ME 4365 Global Sustainability Experience in Design & Manufacture. (1-20 cr.; Student Option; Periodic Summer)
Study abroad prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 4400. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 4401. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FST)

FST 4523. ChE 4613 Air Pollution Control. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 4700. ART 4700 Drawing III. (1-20 cr.; Student Option; Periodic Summer)
Study abroad course. pre-req: Requires approval from International Programs and Services Office.

Foreign Studies (FST)

FST 4801. IE 4801, International Engineering Report. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study abroad course. prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4839. GEOL 4839/BIOI 4839 Coral Reef Field Study - San Salvador Bahamas. (1-20 cr.; Student Option; Periodic Spring)
Study abroad course for winter term prereq: Admission to an approved study abroad program requires consent from the International Education Office.

Foreign Studies (FORS)

FORS 4944. ART 4944 Graphic Design IV. (3 cr.; A-F or Audit; Periodic Summer)
Study Abroad course. Continuation of theory and practice of graphic design. Research-based development of design systems in multiple media. prereq: 3933, Graphic Design major or GDM BFA major or instructor consent and requires approval from International Programs and Services Office; laptop required; digital instruction presented only on a Mac platform; no grad credit.

Foreign Studies (FST)

FST 5002. Psy 5501, Counseling Theories and Skills. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5003. Educ 5804, Programs for Young Children: Global Perspective. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5009. Engl 5821, History of English Language. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.
FST 5012. Biol, 5861, Lake Ecology. \( (1-20 \text{ cr.; A-F or Audit; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5013. ArtH 5391, Directed Study Renaissance and Baroque. \( (1-15 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5014. Math 5280, Partial Differential Equations. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5021. Engl 5591, Independent Study. \( (1-20 \text{ cr. \( \leq 1 \text{ cr.} \); Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 5022. Writ 5220, Document Design and Graphics. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5023. Writ 5230, Web Design and Digital Culture. \( (1-20 \text{ cr.; Student Option; Every Fall, Spring & Summer}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5024. ArtH 5191, Directed Study Ancient/MedievArt. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 5025. Biol 5601, Plant Physiology. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 5026. Biol 5602, Plant Physiology Lab. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 5027. Engl 5122, Advanced Writing of Poetry. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5028. Art 5902, Graphic Design Theory & Criticism. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5029. Art 5991, Independent Work in Graphic Design. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5030. Art 5999, Special Projects in Design. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5031. Engl 5566, Irish Literary Revival. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5032. Jour 5197, Journalism Internship. \( (1-20 \text{ cr.; Student Option; Periodic Fall, Spring & Summer}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5033. Psy 5155, Forensic Psychology. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5034. Math 5900, Team Modeling Project. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5035. Ling 5802, Applied Linguistics. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5036. CS 5541, Artificial Intelligence. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5037. CS 5631, Operating Systems. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5040. Engl 5040, Chaucer. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5041. ArtH 5591, Directed Study in American Art. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5042. Stat 5511, Regression Analysis. \( (1-20 \text{ cr.; Student Option; Periodic Fall}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5043. Art 5016, 2-D Digital Studio II. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5044. Art 5030, Art in Technologies II. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5045. Art 5916, Type Lab. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5046. Art 5991, Independent Study in Graphic Design. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5046. Geol 5095, Legends of the Flood. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5047. Geog 5446, Water Processes and Management. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5048. Educ 5340, Interacting with Diverse Families. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5049. Stat 5511, Regression Analysis. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5050. CS 5721, Computer Graphics. \( (1-20 \text{ cr.; Student Option; Every Fall & Spring}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5051. CS 5621, Computer Architecture. \( (1-20 \text{ cr.; A-F or Audit; Every Fall, Spring & Summer}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 5052. CS 5651, Computer Networks. \( (1-20 \text{ cr.; A-F or Audit; Every Fall, Spring & Summer}) \)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 5053. CS 5551, User Interface Design. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5054. CS 5641, Compiler Design. (1-20 cr.; A-F or Audit; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5055. Biol 5811, Plant Autecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5056. Biol 5831, Plant Pop and Community Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5057. Biol 5862, Advanced Lake Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5058. Biol 5865, Conservation Biology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5059. Math 5371, Abstract Algebra I. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5060. Art 5030, Art in Technologies II. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5061. Geol 5200, Geological Field Studies. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 5062. Folk Song and Dance in Britain. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office. No Graduate School Credit.

FST 5063. MibC 5555 Molecular Pathogenesis: Current Concepts. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5064. Biol 5240 Ecological Genetics. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5065. Biol 5401 Coevolution of Plants, Animals and Microbes. (1-20 cr.; Student Option; Every Fall, Spring & Summer)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5066. Engl 5444, Childhood in Literature, History and Culture. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

FST 5068. Scotland and Empire. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office. No Grad School cr

FST 5069. Global Engagement in Puerto Vallarta, Mexico. (3 cr.; Student Option; Every Fall & Spring)
Study abroad program. Puerto Vallarta Global Service Learning program. prereq: Required consent from the International Education Office.

FST 5070. Geol 5200, Geological Field Study (in Poland). (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5071. Art 5909, Interactive Design. (1-20 cr.; Student Option; Every Fall)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5072. Voice. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad course. Required consent from the International Education Office. (No Grad School cr)

FST 5073. Opera Coaching. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office. (No Grad School cr)

FST 5074. Hlth 5341, Death Education. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office. No Grad School cr.

FST 5075. SW 5091, Independent Study. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office. No Grad School cr

FST 5076. Stat 5411, Analysis of Variance. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5077. Engl 5562, Victorian Literature. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5078. Engl 5561, English Romanticism. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5079. Engl 5222, Shakespeare. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5080. Art 5795 Intermedia Studio Problems. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 5081. CSD 5195, T: Service-Learning in Mexico. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 5082. CSD 5195 Special Topics: Second China International Conference for Speech Therapy. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 5083. MATH 5280 Partial Differential Equations. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 5085. Engl 5541 Restoration and 18th Century Literature. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: Admission to an approved study abroad program requires
consent from the International Education Office.

**FST 5086. Natural Language Processing.** (1-20 cr.; Student Option; Periodic Fall)
Study Abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 5087. Engli 5533 Studies in British Literature Before 1800.** (5 cr.; Student Option; Periodic Spring)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 5088. PHYS 5052.** (1-20 cr.; Student Option; Periodic Fall)
Study abroad course prereq: Admission to an approved study abroad course. Required consent from the International Education Office.

### Foreign Studies (FORS)

**FORS 5201. MU 5201 Advanced Music History.** (1-20 cr.; Student Option; Periodic Summer)
Study Abroad pre-req: Requires approval from International Programs and Services Office

**FORS 5202. MU 5201 Adv Music History.** (1-20 cr.; Student Option; Periodic Summer)
Study Abroad pre-req: Admission to an approved study abroad program requires consent from the International Programs and Services Office

**FORS 5500. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 5501. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 5502. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 5503. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FORS 5504. International Education.** (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FR 5591. Hlth 5991 Independent Study.** (1-20 cr.; Student Option; Periodic Summer)
Admission to an approved study abroad program requires consent from the International Education Office. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FR 5990. HLTH 5100 History of Health in Italy.** (1-20 cr.; Student Option; Periodic Summer)
Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

### French (FR)

**FR 1101. Beginning French I.** (COMM & LAN; 4 cr.; A-F or Audit; Every Fall & Summer)
Conversation and communicative course for students with little or no previous study of French. Emphasis on oral and aural skills; some grammar. Taught in French and English. prereq: Little or no prior formal study of this language, or instructor consent

**FR 1102. Beginning French II.** (COMM & LAN; 4 cr.; A-F or Audit; Every Spring & Summer)
Conversation and communicative course for students with limited previous study of French. Emphasis on oral and aural skills; some grammar. Taught in French and English. prereq: 1-2 yrs high school French or 1101 or instructor consent

**FR 1201. Intermediate French I.** (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Consolidation and enrichment of previously acquired abilities speaking and understanding French, set within introduction to written French and survey of contemporary culture of French-speaking societies. Emphasis on oral, aural, and reading skills; vocabulary building; some writing. Taught in French. prereq: 3-4 yrs high school French or 1102 or instructor consent

**FR 1202. Intermediate French II.** (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Consolidation and enrichment of previously acquired abilities speaking and understanding French, set within introduction to written French and survey of contemporary culture of French-speaking societies. Emphasis on oral, aural, and reading skills; vocabulary building; some writing. Taught in French. prereq: 4 yrs high school french or 1201 or instructor consent

**FR 2301. Advanced French.** (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Development of French literacy within a culturally authentic contemporary context. Emphasis on practical writing and formal oral and aural communication skills; vocabulary building; enhancement of reading skills; review of key grammar. Taught in French. prereq: 5 years high school french or 1202 or instructor consent

**FR 2315. French Cinema.** (HUMANITIES; 4 cr.; A-F or Audit; Periodic Spring)
Images of human diversity in French cinema. Films with English subtitles; class discussion in English.

**FR 3302. Advanced French Composition and Conversation.** (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Refines students' skills in oral and written expression after they have completed the French language sequence. Individualized work on points of syntax and semantics, set in a contemporary context, using a variety of texts and resources, prereq: 1202 or 2301 with grade of C or higher or instructor consent

**FR 3305. French Cuisine: Exploring French Culture Through Food.** (GLOBAL PER,HUMANITIES; 4 cr.; A-F or Audit; Every Fall)
Taught in French. Aspects of French culture through its expression in cuisine. Students will learn to decipher the many expressions of culture around the preparation and service of food at the table, kitchen, and restaurant. prereq: 1202 or 2301 with grade of C or higher or instructor consent

**FR 3310. Survey: Essays, Short Stories, Poetry in the French Language.** (HUMANITIES; 4 cr.; A-F or Audit; Spring Even Year)
Selected works in three genres, written in the French language from the 15th Century to the present: essays, short stories, poetry. prereq: 1202 or 2301 with C or higher or instructor consent

**FR 3550. The History of Paris: Evolution and Revolution.** (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall)
This course, taught in English with readings in French for French majors, examines topics, themes and episodes related to the cultural history of Paris and the French language through selected readings in literature, sociology, architecture and sustainability studies. Students will use the evolution of Paris and the development of the French language as entry points into a deeper exploration of French identity, including analysis of important contemporary issues related to gender, class, and sustainability. Students will study and explore the ways in which French history has consisted of binary oppositions: Paris-Provinces, Parisian French-Local Patois, Order-Revolution, etc. Additionally, students will explore the traces of French history around Paris, from the names of streets to the monuments in the squares and parks, to the sites of power within the city.

**FR 3591. Independent Study.** (1-4 cr. [max 8 cr.]; A-F or Audit; Every Fall & Spring)
Students develop and carry out reading and research programs in consultation with the instructor. prereq: 2301 with C or better, instructor consent

**FR 3905. Autobiography in French Literature and Cinema.** (HUMANITIES; 4 cr.; A-F or Audit; Spring Odd Year)
Selected autobiographical works in French and Francophone literature and cinema from the
16th Century to the present. prereq: 2301 or instructor consent

**FR 4018. Studies in Francophone Cultures and Literature.** (GLOBAL PER; HUMANITIES; 4 cr.; A-F or Audit; Spring Every Year) Studies literature and film from francophone (i.e. the French-speaking world) such as Maghreb, Sub-Saharan Africa, French Indochina, Canada, and the French West Indies. Focuses on politics and aesthetics in relation to colonization, diaspora, cultural identities and metissage (cultural, linguistic and ethnic blending or hybridity) as well as the creation of new existential and political spaces. Taught in French. prereq: 1202 or 2301 with grade of C or better; or instructor consent; no grad credit

**FR 4095. Special Topics (Various Titles to be Assigned).** (; 4 cr.; A-F or Audit; Periodic Fall & Spring) Various topics in the language, history, literature, and culture of France and/or Francophone countries. prereq: 1202 or 2301 with a C or better; or instructor consent; no grad credit

**FR 4112. Contemporary French Culture and Society.** (GLOBAL PER; HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Study of contemporary social, cultural, and political issues in France and other Francophone regions. Conducted in French. prereq: 1202 or 2301 with grade of C or higher; or instructor consent; no grad credit

**FR 4422. 20th-Century Novel.** (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Study of representative novels. Taught in French. prereq: 2301 or equivalent with C or better or instructor consent; no grad credit

**FR 4472. French Classical Literature.** (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Representative works of 17th-century French prose, poetry, and theatre. Taught in French. prereq: 2301 or equivalent with C or better or instructor consent; no grad credit

**FR 4482. Voltaire and Rousseau in English.** (; 4 cr.; A-F or Audit; Periodic Fall & Spring) Representative works. Taught in English.

**FR 4492. Modern French Literature.** (19th-21st century). (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Literary works from the 19th through the 21st century studied within their historical, political, and social contexts. Taught in French. prereq: 1202 or 2301 with C or better; or instructor consent; no grad credit

Geographic Information Science (GIS)

**GIS 2552. Mapping Our World.** (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) This course starts with the definition of what a map is and considers maps as tools for communication. Students are led to explore the effects of scale, projection, cartographic symbolization and generalization on the mapping process and resulting digital databases. Students are introduced to spatial data models, types of spatial data and representation, and study alternative or non-tradition map representations provided by GIS and Remote Sensing. The course includes hands-on map activities; map reading/interpretation, map use, and map production where students will use their laptops to create online web mapping services.

**GIS 3563. Geographic Information Science I: Theory and Analysis.** (; 4 cr.; A-F only; Every Fall & Spring) GIS 3563 emphasizes the concepts needed to use GIS effectively for acquiring, editing, querying, analyzing and visualizing spatial data. This course is an introduction to GIS and trains basic skills with industry standard GIS software in a wide variety of applications in both the natural and social sciences. The course covers basic data modeling, data manipulation, analytical methods and implications of geospatial technologies on society. prereq: credit will not be granted if already received for GEOG 3564 or 4563 and 4566 or GIS4565.

**GIS 3564. Geographic Information Science II: Applied GIS.** (4 cr.; A-F or Audit; Every Fall & Spring) GIS 3564 follows 3563 and provides more hands-on skills with industry standard GIS software in a wide variety of applications in both the natural and social sciences. It covers more advanced analytical methods for both raster and vector data. Lastly, the course questions ethics regarding geospatial information and introduces the code of ethics for GIS professionals. prereq: 3563; credit will not be granted if already received for GEOG 3564 or 4563 and 4566 or GIS4565.

**GIS 3580. Earth Imagery.** (4 cr.; A-F only; Every Fall) his course is a selective overview of the methods used for imaging the Earth and its atmosphere. The objective is to expose students to the common methods of Earth imaging and provide them with hands-on experiences in exploring these rich datasets. This course introduces aerial photographs, satellite imaging (active and passive forms), and Digital Elevation Models (DEMs). By the end of the course students will be able to comfortably analyze multispectral Earth imagery, handle a LiDAR point cloud, and create a variety of informative outputs from an image. prereq: 2552; credit will not be granted if already received for GEOG 3580.

**GIS 3591. Independent Study in GIS.** (1-3 cr. max 6 cr.; A-F only; Every Fall, Spring & Summer) For students interested in doing advanced work in selected fields of GIS. prereq: instructor consent

**GIS 3597. Internship in GIS.** (3-4 cr. max 8 cr.; A-F only; Every Fall, Spring & Summer) Scheduled assignments with direct supervision in public agencies or relevant private firms. prereq: GIS major with minimum 60 credits and instructor consent

**GIS 4533. Distributed Geographic Information Services: Mobile and Web Based Solutions.** (4 cr.; A-F only; Fall Even Year) There are currently over 1 million GIS users world-wide producing nearly 15,000 maps daily. The vast majority of these users utilize the internet and mobile devices to collect, manage, process and store the geospatial data necessary to create and distribute these maps. As such, GIS is shifting from a system where the focus lies almost entirely on the data itself, to a geographic information service where the focus lies on the distribution of spatial content to stakeholders and end users via the internet. The aim of this course is to expose students to the practical and theoretical applications of distributed geographic information services including web and mobile apps, virtual and physical servers, APIs, and scripting languages (Javascript, CSS, HTML5, SVG). Labs and a group semester project will focus on a distributed GIS for a stakeholder within the region. Software used will vary, but may include ArcGIS Online, ArcGIS Pro, or open-source software. pre-req: GIS 3563 or instructor consent; credit will not be granted if already received for GIS 3533

**GIS 4565. Geographic Information Science Intensive: Theory, Analysis, and Applications.** (4 cr.; A-F or Audit; Every Fall) This course is an intensive introduction to GIS, effectively condensing both GIS 3563 and GIS 3564 into one semester. It is intended for students with excellent computer skills, the capacity to handle a heavy workload but not enough time to take both courses. The course covers the concepts needed to use GIS effectively for manipulating, querying, analyzing, and visualizing spatial data. It will also equip students with basic and advanced skills with industry standard GIS software, through a wide variety of hands-on applications in both the natural and social sciences. Students will have to create, manage, and complete their own GIS application throughout the semester. pre-req: grad student or department consent This course is equivalent to GIS 3563 and GIS 3564 combined, but 3563 and 3564 carry no graduate credit.

**GIS 4585. Applied Statistics in GIS.** (4 cr.; A-F only; Every Spring) This course provides GIS students, or students in related fields or interested in spatial data analysis, with little to no previous statistical knowledge, with the basic skills needed to question and analyze data and reach valuable conclusions. Methods covered in this course are commonly used in various fields of social or environmental studies, in economy and management, in sciences and engineering: statistics are a lingua franca that is often a key element of interdisciplinary work. However, there will be an emphasis on the specificity of data that varies in space, and methods specific to spatial analysis will be introduced. The class focus more on application that on theory, through a game dynamic. We may use

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
GIS 4586. Geoprocessing with Python. (4 cr. ; A-F or Audit; Fall Odd Year)
Python has become the main scripting language used for geoprocessing. In this class, building on previous GIS experience, students learn how to automate geoprocessing workflows with Python and how to turn their code into tools and add-ins for the main commercial and open-source GIS software systems. prereq: 3563 and 3564 or 4565 preferred

GIS 4909. Professional Preparedness. (1 cr. ; S-N only; Every Spring)
This course is intended for GIS seniors graduating in the spring or the following fall. This is a seminar/workshop course where a group of graduating students work together and under the guidance of their instructor to assess and self-reflect on where they stand as early career GIS professionals. Courses activities include tests, discussion, construction of portfolios and mock job interviews. The course grade is satisfactory/non-satisfactory, based on participation. pre-req: GIS major, minimum 90 credits, no grad credit

GIS 4910. Teaching Assistantship in Geographic Information Science. (1-4 cr. [max 8 cr.]; S-N only; Periodic Fall, Spring & Summer)
Practical experience in teaching beginning courses in the department. Students serve as intern teachers assisting the instructor in administration of the course. pre-req instructor consent, no grad credit

GIS 4999. Honors Project in Geographic Information Science. (1-4 cr.; A-F only; Periodic Fall, Spring & Summer)
Advanced individual project in any area of Geographic Information Science demonstrating sound theoretical and research foundations and resulting in a written report or other expression of scholarly production. pre-req: instructor consent; no grad credit

GIS 5533. Web-based GIS. (4 cr.; A-F or Audit; Fall Even Year)
There are currently over 1 million GIS users worldwide producing nearly 15,000 maps daily. The vast majority of these users utilize the internet and mobile devices to collect, manage, process and store the geospatial data necessary to create and distribute these maps. As such, GIS is shifting from a system where the focus lies almost entirely on the data itself, to a geographic information service where the focus lies on the distribution of spatial context to stakeholders and end users via the internet. The aim of this course is to expose students to the practical and theoretical applications of distributed geographic information services including web and mobile apps, virtual and physical servers, APIs, and scripting languages (JavaScript CSS, HTML5, SVG). Labs and a group semester project will focus on distributed GIS for a stakeholder within the region.

GIS 5571. Geographic Information Science in Urban Analysis. (4 cr.; A-F only; Spring Even Year)
This advanced course provides students with an opportunity to explore the many applications of geographic information systems in local government, transportation development, and sustainable community planning. Students learn how GIS can be used to effectively carry out urban and regional planning tasks and gain a basic understanding of GIS project planning and data management. Labs focus on land use planning, transportation development, green infrastructure, and population dynamics from across the globe, with a particular focus on the Duluth area. Software used will be ESRI ArcGIS. prereq: 3563 and 3564 or 4565 (preferred) or instructor consent; credit will not be granted if already received for GEOG 4533

GIS 5572. Environmental Application of GIS. (4 cr.; A-F only; Every Fall)
Explore GIS applications to the environmental issues such as natural hazards, forest management, contaminated sites, soil erosion, habitat assessment, and regional planning. Prereq: 3563 or 4565 or grad student or instructor consent; credit will not be granted if already received for GEOG 5571

GIS 5573. GIScience in Regional Sustainability Applications. (4 cr.; A-F only; Spring Even Year)
This course provides students with an opportunity to explore the many applications of geographic information science in environmental and societal sustainability, renewable energy, and community planning. This course is based on the idea that in order to successfully transition toward sustainability, a better understanding of coupled human and natural systems in critical, and that because of the unique challenges and conflicts present within northern Minnesota between human and natural systems, it is an ideal location to attempt to mitigate these challenges through the use of Geographic Information Science. Labs focus on current topics relevant to the region including energy use calculations, food deserts, LEED certification, water pollution, and transit planning. Software used will be ESRI ArcGIS. Prereq: 3563 and 3564 or 4565 (preferred) or instructor consent; credit will not be granted if already received for GEOG 5572

GIS 5581. Digital Image Processing and Analysis. (4 cr.; A-F only; Every Spring)
This advanced remote sensing course focuses on theories and applications of digital image processing and provides students with knowledge and skills of advance digital image processing and a variety of analytical techniques. Topics include image display and visualization, methods for geometric and radiometric corrections, image enhancement, image classification, change detection, and Principal Component Analysis (PCA). prereq: 3580 or instructor consent; credit will not be granted if already received for GEOG 4580 or GEOG 5581

GIS 5585. Applied Statistics in GIS - graduate level. (4 cr.; A-F or Audit; Every Fall)
The aim of this course is to provide graduate students interested in spatial data analysis with skills needed to analyze spatial data. Many of the methods covered in this course are commonly used in various fields of social or environmental studies, in economy and management, in sciences and engineering; statistics are a lingua franca that is often a key element of interdisciplinary work. However, there will be an emphasis on the specificity of data that vary in space and on methods specific to spatial analysis. The class will focus on both theory and application, through a problem solving approach. We will use a variety of software, mostly ArcGIS, QGIS and MS Excel. pre-req: grad student, GIS 4565 or GIS 3563; credit will not be granted if already received for GIS 4585

GIS 5586. Geoprocessing with Python. (4 cr.; A-F or Audit; Fall Even Year)
Python has become the main scripting language used for geoprocessing. In this class, building on previous GIS experience, students learn how to automate geoprocessing workflows with Python and how to turn their code into tools and add-ins for the main commercial and open-source GIS software system. pre-req: Grad student, GIS 3563 or 4565; credit will not be granted if already received for GIS 4586

GIS 5591. Independent Study in GIS. (1-3 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer)
Independent problems for postbaccalaureate students interested in doing additional work in selected fields in GIS. prereq: instructor consent

Geography (GEOG)

GEOG 1202. World Regional Geography. (GLOBAL PER; 3 cr.; A-F only; Every Fall & Spring)
World Regional Geography offers an overview of the different regions which comprise the world. This course analyzes the relationship between the environment, economic development, culture and politics. In terms of the weekly pacing of the course, we will focus on a different world region each week. However, in a more general sense, we will focus on the root causes of global problems, not the specifics of each world region. In this way, a central goal of this class is to challenge the notion that world regions exists in isolation from other spaces. Instead, we will analyze how regions develop and change based on how they manage their relationships with other spaces.

GEOG 1205. Our Globalizing World. (GLOBAL PER, SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring)
This course analyzes the relationship between the environment, economic development,
culture, and politics by examining human geography in the context of global regions. This course introduces core concepts in human geography such as space, place, and scale, and globalization, and applies those concepts to understand the diversity of our globalizing world. Topics from the impact of climate change, to colonialism, the geography of agriculture, urbanization, geopolitics, and ethnic and national identities are explored.

**GEOG 1304. Human Geography.** (SOC SCI; 3 cr.; A-F only; Every Fall, Spring & Summer) Human geography is a social science that examines the world, its people, and their communities, economies, politics, and interactions with the environment. This course introduces core concepts such as space, place, and scale, and applies them to understand human society. Topics from the spread of humans around the globe, to colonialism, the geography of agriculture, urbanization, geopolitics, and racial and ethnic difference are explored.

**GEOG 1414. Physical Geography.** (NAT SCI, SUSTAIN; 4 cr.; A-F only; Periodic Fall, Spring & Summer) The environment is highly dynamic and is continually modified by human and environmental processes. This course examines these processes to better understand how the Earth's landscapes were formed and how they are currently being transformed. Specifically, students will understand the fundamental processes that govern the physical environment including Earth-sun relations, water resources, landforms, weather and climate, natural vegetation, and soils.

**GEOG 2305. Geography of Cultural Diversity.** (CDIVERSITY; 3 cr.; A-F only; Periodic Spring) This course utilizes social scientific approaches to cultural diversity in the United States to develop a critical understanding of the geography of our unequal society. We examine why humans spatially segregate themselves into racial, ethnic, and cultural groups, how meaning is constructed around these differences, and how the politics of difference are expressed geographically. Credit will not be granted if already received for GEOG 2405.

**GEOG 2306. Environmental Conservation.** (SUSTAIN; 3 cr.; A-F only; Every Fall, Spring & Summer) In order to adapt to and mitigate environmental challenges that are predicted to occur in the future, we must have a clear understanding of the physical, economic, societal, and political contexts that brought us to the present. This course examines the complexity of coupled social-ecological systems and the role that humans have played in changing the face of the Earth.

**GEOG 2313. Economic Geography.** (SOC SCI; 3 cr.; A-F only; Every Fall) Contemporary geographic pattern analysis of production, distribution, and consumption of goods and services. Development of geographic theories and models that attempt to explain spatial variations of economic activities such as agriculture, manufacturing, and trades and services.

**GEOG 2552. Introduction to Maps and Geospatial Information.** (LOGIC & QR; 3 cr.; A-F only; Every Fall, Spring & Summer) This course starts with the definition of what a map is and considers maps as tools for communication. Students are led to explore the effects of scale, projection, cartographic symbolization and generalization on the mapping process and resulting digital databases. Students are introduced to spatial data models, types of spatial data and representation, and study alternative or non-tradition map representations provided by GIS and Remote Sensing. The course includes hands-on map activities; map reading/interpretation, map use, and map production where students will use their laptops to create online web mapping services.

**GEOG 3334. Urban Geography.** (3 cr.; A-F only; Every Fall) As the world becomes more urbanized there seems to be less distinction between global problems and urban problems. Analysis of the relationship between urbanization and other aspects of our modern world such as economic globalization, increased levels of international migration, and warfare. Examine how global dilemmas can be seen in the national and international issues. Pay particular attention to the everyday struggles that occur in the households and neighborhoods of cities as people attempt to care for themselves and their families in this rapidly changing world. prereq: Minimum 30 credits or instructor consent.

**GEOG 3335. Urban Planning.** (3 cr.; A-F only; Every Spring) Urban planning explores the purpose, practice, and theories of modern community planning for the promotion of social and economic well-being. The causes of urban problems, and the tools planners can use to solve them will be investigated. Special focus will be paid to citizen participation and how the voices of community members can be heard in the planning process. prereq: Minimum 30 credits.

**GEOG 3370. Geographies of Development.** (3 cr.; A-F only; Periodic Fall) This class examines the global geography of wealth and poverty, i.e., where some places are very rich while others are very poor. The impacts of colonialism, the Cold War, globalization, overpopulation, and ecological and climate change are explained, and the prospects for a more just future are considered. prereq: Minimum 30 credits.

**GEOG 3401. Weather and Climate.** (3 cr.; A-F only; Every Spring) Weather and climate are critical to both Earth systems and human societies, yet they are frequently misunderstood. The goal of this course is to develop a scientific understanding of atmospheric processes and how they are responsible for weather events and climatic patterns. Atmospheric composition, structure, and motion are studied, along with precipitation processes, air masses, fronts, cyclonic storms, and the distribution and classification of climates. prereq: 1414, minimum 30 credits or instructor consent.

**GEOG 3411. Human Environment Interactions.** (3 cr.; A-F or Audit; Periodic Fall & Spring) This course examines the interactions between humans and their physical environments. Topics covered include the physical components of the natural environment, human population growth and movement, natural resource use, and human impact upon vegetation, soil, water, landforms and climate. pre-req: Minimum 30 credits or instructor consent.

**GEOG 3422. Natural Hazards.** (3 cr.; A-F only; Every Spring) Geography of natural hazards such as earthquakes, volcanoes, tornadoes, hurricanes, floods, and droughts; human-physical environment interrelationships under extreme geophysical conditions; causes, characteristics, and consequences of natural hazards; human adjustment to natural hazards. prereq: 1414 or Geol 1110, or minimum 30 credits or instructor consent.

**GEOG 3441. Geography of Global Resources.** (SUSTAIN; 3 cr.; A-F only; Every Spring) Spatial distribution and uses of global natural resources addressed through models of resource management, focusing on energy, non-fuel minerals, population, food, and technology. Theoretical approach and political perspective applied to trade, international economic development, and environmental issues. prereq: Minimum 30 credits or instructor consent.

**GEOG 3481. Urban Ecology.** (3 cr.; A-F only; Every Spring) Introduction to theoretical, practical and policy aspects of urban ecology. Discusses methods of sustainable cities and ecologically responsible planning. Includes study of relevant field techniques and policy issues, including public participation in planning process and development of sustainable growth strategies. prereq: Minimum 30 credits or instructor consent.

**GEOG 3532. Map Design and Geographic Visualization.** (4 cr.; A-F only; Every Fall & Spring) This class builds on GEOG 2552 to train students in the craft of map making and visualization of geographic data in general. Students learn how to create reference or thematic maps from statistical data, both for printing or online display. Students are also introduced to the creation of animated or interactive visualizations. (4 hrs lab) prereq: 2552 or instructor consent; Stat 1411 recommended.

**GEOG 3712. Geography of Latin America.** (3 cr.; A-F only; Every Spring) Considers the social, physical and political landscapes of Latin America and the Caribbean before, during and after the European invasion and colonial times. Examines contemporary dynamics in the region from a political ecology.
GEOG 3800. Community Empowerment in South Asia - Study Abroad. (GLOBAL PER; 4 cr.; A-F only; Periodic Summer) This course will take students to Bangalore, India where they will learn about the history and culture of India and examine processes of social change. Bangalore has grown tremendously in recent years as the city has become the center of India's high-tech economy. However, the benefits of this growth have not been equally distributed; slums that house millions of the city's poorest residents are located alongside gleaming new office towers and shopping malls. In this course, students will examine the causes of these disparities and learn how disenfranchised groups such as women, lower caste members, tribal communities, and religious minorities are advocating for their social and economic rights. Students will be challenged to think about how realities in India mirror realities in the United States today, and how they too can become agents of change in their communities. prereq: minimum 3.0 GPA, 30 credits, & instructor consent; also visit the UMD Study Abroad office.

GEOG 3991. Independent Study in Geography. (1-4 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer) For students interested in doing advanced work in selected fields of geography. prereq: instructor consent

GEOG 3995. Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 8 cr.]; A-F only; Periodic Fall & Spring) Topics in geography of current and special interest to students that are not offered in regular department curriculum. Topics may involve specialties of staff or visiting faculty.

GEOG 3997. Internship in Geography. (1-6 cr. [max 8 cr.]; Student Option; Every Fall, Spring & Summer) Scheduled assignments with direct supervision in public agencies or relevant private firms. prereq: Geography major, 60 credits, instructor consent

GEOG 4393. Political Geography. (3 cr. [max 4 cr.]; A-F only; Periodic Fall & Spring) This course examines the geography of social power from international geopolitics, to protest politics in public space, to theories of heteronormativity and patriarchy. The central focus of this course is the spatial organization of politics, i.e., how people organize themselves into groups, how different groups police themselves and vie with each other in various places and at multiple scales. prereq: Minimum 60 credits including or instructor consent

GEOG 4401. Climate Science. (3 cr.; A-F or Audit; Every Fall & Spring) This course examines the complex relationship between the atmosphere, oceans, and the biosphere over space and time, and how they relate to Earth's climate. Specifically, this course will study the basic forces that drive Earth's climate systems, how climate differs between the equator and the poles and between oceans and continents, and how these difference results in variations in Earth's climate. In addition, we will explore the global balance and distribution of energy and the transfer of that energy throughout the atmosphere, the role of land and ocean surfaces in climate forcing, how global atmospheric and oceanic circulation patterns are related, and examine long-term climate forcing (ENSO, NAO, MJO, etc.) Lastly, we will understand how these processes have varied in the past, and how current variations are leading to fundamental changes to our climate system. pre-req: GEOG 3401; no grad credit

GEOG 4446. Water Processes and Management. (3 cr.; A-F only; Every Spring) Introduction to the surface water processes and water resources management, including precipitation, runoff generation, channel processes, spatial and temporal variations in water distribution, aspects of water quantity and quality, and watershed management problems. Prereq: Geog 1414 or Geol 1110 or Graduate students or Instructor consent.

GEOG 4451. The Geography of Soils. (4 cr.; A-F only; Every Fall) This course gives students a fundamental understanding of the soil as a living resource. The course covers basic soil science and the critical need for sustainable soil management in the context of current agricultural and climate change. The course includes outdoor field excursions, hands-on soil study both in the field and in the lab. Course includes a weekend field trip, prereq: 1414 or Geol 1110 or graduate student or instructor consent

GEOG 4612. Field Techniques. (4 cr.; A-F only; Every Spring) This course trains students in field research methods including methods of observation, recording, analysis, and presentation of field data. The course includes a four day field research experience in Minnesota. prereq: Minimum 60 credits or grad student or instructor consent

GEOG 4803. Geographic Thought. (3 cr.; A-F only; Every Fall) Development and significance of geographic concepts and thought. History and intellectual roots of contemporary geography, geographers, and geographic institutions. prereq: 60 credits or grad student or instructor consent

GEOG 4910. Teaching Assistantship in Geography. (1-4 cr. [max 8 cr.]; S-N only; Periodic Fall & Spring) Students who have completed teaching beginning courses in the department. Students serve as meta teachers assisting the instructor in administration of the course. pre-req: instructor consent, no grad credit

GEOG 4990. Geography Seminar. (1 cr.; A-F only; Every Fall & Spring) Presentation and discussion of current geographic research, including but not limited to human/physical geography, environments and sustainability, urban geography and planning, and GIS applications. prereq: Geography major or minor and minimum 90 credits; no grad credit, credit will not be granted if already received for Geog 5999.

GEOG 4999. Honors Project Geography. (3 cr.; A-F only; Every Fall & Spring) Advanced individual project in any area of Geography, GIScience, Urban and Regional Studies, or Environment and Sustainability demonstrating sound theoretical and research foundations and resulting in a written report. prereq: minimum 90 credits, approval by department honors program director; no grad credit

GEOG 5101. Water Policy. (3 cr.; A-F or Audit; Every Fall & Spring) Socio-cultural, legal, and economic factors that affect water resources management. Historical trends in water policy, resulting water laws in the United States, Federal, state and local institutional structures for water management. pre-req: Grad student or instructor consent

GEOG 5991. Independent Study in Geography. (1-4 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer) Independent projects for postbaccalaureate students interested in doing additional work in selected fields in geography. prereq: Maximum 4 credits can be applied to graduate program; instructor consent

Geology (GEOL)

GEOL 1044. Freshman Seminar: Revolution in the Earth Sciences. (3 cr.; A-F or Audit; Periodic Fall) How theories of mountain building evolved to continental drift to a not-quite-all-encompassing dynamic plate tectonics model for the outer reaches of the Earth--a triumph of observation and synthesis despite disbelief, ridicule, and hard luck.

GEOL 1110. Geology and Earth Systems. (SUSTAIN,NAT SCI; 4 cr.; A-F or Audit; Every Fall & Spring) Earth systems science is an interdisciplinary approach to understanding the processes operating within and the interactions between the geosphere, hydrosphere, atmosphere, and biosphere. In this course we investigate the changing nature of the Earth; its composition, architecture, and antiquity; the internal and external processes that shape it through time; cycles of energy and matter; the development of life and impact of human activity; and both local environmental issues and global change.

GEOL 1120. Life and Death of the Dinosaurs. (NAT SCI; 3 cr.; A-F or Audit; Periodic Spring) Survey of dinosaurs, who dominated large-animal life on Earth for 150 million years; theories of dinosaur origins and extinction; habitat of dinosaurs on worldwide Mesozoic coastal plains; dinosaur fossilization and modern excavation.

GEOL 1130. Introduction to Environmental Science. (SUSTAIN,NAT SCI; 4 cr.; A-F or Audit; Every Spring) Earth's physical and biological systems and human interaction with the environment.
Climate, rocks, soils, ecosystems, human population, land use, energy use and its consequences, environmental policy, air and water pollution, and conservation issues.

**GEOL 1610. Oceanography.** (SUSTAIN,NAT SCI; 3 cr.; A-F or Audit; Every Fall) Origin and history of ocean basins, sea floor morphology, chemistry of sea water, currents, waves, tides, life in the sea, primary productivity, nutrient dynamics, human impact. pre-req; Credit will not be granted if already received for 2610.

**GEOL 2010. Surface Processes.** (4 cr. [max 8 cr.]; A-F or Audit; Every Fall) Study of earth surface processes emphasizing the origin and evolution of the earth's surface; response of the physical environment to anthropogenic perturbations, climate change, and tectonic events; and application of physical, chemical, and mathematical principles to the study and interpretation of the environment. Surface processes will be explored through field and lab exercises designed to give the student hands-on experience in environmental characterization and monitoring, pre-req: GEOL 1110 or 1610 or GEOG 1414, MATH 1250 or 1290 or 1296 or 1596, CHEM 1153 or 1173 or instructor consent

**GEOL 2110. Earth History.** (; 4 cr.; A-F or Audit; Every Spring) The historical development of the science of geology, nature of the geologic record, fossils, the geologic time scale, and tectonic evolution of continents and ocean basins. Concepts presented are developed within the framework of the theory of plate tectonics. pre-req: 1110 or 1130 or 2610 or Ast 1040 or Geog 1414 or instructor consent

**GEOL 2120. The Earth's Dynamic Interior.** (; 3 cr.; A-F or Audit; Every Spring) Treatment of the origin, structure and internal composition of the Earth, synthesizing geological, chemical and physical knowledge bearing on the Earth's inaccessible interior. Emphasis is placed on dynamic processes at all depths in the Earth. pre-req: 1110 or 1130 or 2110 or 2110 or 1610 or Geog 1414

**GEOL 2311. Mineralogy.** (4 cr.; A-F or Audit; Every Spring) Systematic study of minerals and their relationship to rocks. Emphasis will be placed on introductory crystal chemistry, crystallography and physical properties; optical mineralogy, and identification of minerals in hand specimen, thin section, and by x-ray diffraction. (Course fee assessed.) pre-req: 1110 or 2110, 1 semester college chemistry or instructor consent

**GEOL 2312. Petrology.** (5 cr.; A-F or Audit; Every Fall) Petrology of igneous, sedimentary and metamorphic rocks, including their occurrence, petrogenesis and tectonic setting. Emphasis on the relationships between mineral assemblages, rock textures, geochemistry, origins, and rock-forming processes. Course fees assessed. pre-req: 2311

**GEOL 2350. Earth's Resources.** (NAT SCI; 3 cr.; A-F or Audit; Every Fall) Distribution of Earth's resources through space and time, including metals, minerals, fossil fuels, building materials, water, and soil. Relationships between population growth and Earth's finite resources. (field trip) pre-req: Minimum 25 credits or instructor consent

**GEOL 3000. Geologic Maps.** (; 3 cr.; A-F or Audit; Every Spring) Principles of reading and interpreting geological maps. Emphasis will be placed on interpreting and visualizing published geologic maps, constructing geologic histories, and an introduction to the basic methods of making geologic maps in the field. pre-req: 2312

**GEOL 3091. Independent Study.** (1-2 cr.; Student Option; Every Fall, Spring & Summer) Directed readings and projects on topics not normally covered in other courses. pre-req: instructor consent

**GEOL 3100. Earth's Climate and Environment: Past and Future.** (3 cr.; A-F or Audit; Spring Even Year) Exploration of the processes that control Earth's climate and affect the environment on timescales of 100's of millions to 10's of years. Discussions will include how and why the dinosaur's environment was different from today's environment and concerns about future global warming. pre-req: 1110 or 1130 or 1610, Chem 1151 or 1153/1154

**GEOL 3210. Geomorphology.** (4 cr.; A-F or Audit; Every Fall) Study of Earth surface processes emphasizing the origin and evolution of landforms; response of the physical environment to climatic change and tectonic events, and application of physical, chemical, and mathematical principles to the study and interpretation of landforms. pre-req: 1110 or 2110, Math 1250 or 1290 or 1296 or 1596 or instructor consent

**GEOL 3420. Sedimentology and Stratigraphy.** (4 cr.; A-F or Audit; Every Fall) Introduction to the concepts, methods, and application of sedimentology and stratigraphy, including the description and interpretation of sediments and sedimentary rocks, their provenance, stratigraphic position, and tectonostratigraphic setting. (Course fee assessed.) pre-req: GEOL 1110 and MATH 1290 or 1296 or 1596 or instructor consent

**GEOL 3540. Geologic Field Methods.** (; 1 cr.; A-F or Audit; Every Fall) Introduction to basic methods in geologic mapping and creation of geologic maps. All work done in the field during the first 6 weeks of fall semester. Course fees assessed.

**GEOL 3710. Introduction to Geochemistry.** (3 cr.; A-F or Audit; Periodic Spring) Understanding chemical reactions occurring in geological processes on scales ranging from atomic to global. Geochemistry of the Earth; chemical reactions and stability of minerals; applications of geochemistry to understanding global processes and environmental problems. (3 hrs lect) pre-req: Math 1296 or equiv, Chem 1152 or instructor consent

**GEOL 3800. Principles of Geophysics.** (; 4 cr.; A-F or Audit; Every Fall) An introduction to the geophysical concepts and techniques used by practicing geoscientists. pre-req: 2120, MATH 1297, PHYS 1002

**GEOL 3996. Internship in Geological Sciences.** (1-2 cr. [max 4 cr.]; S-N or Audit; Every Fall, Spring & Summer) Credit given for professional field work experience outside an academic department. Requires prior departmental approval and coordination with faculty sponsor. pre-req: 2312, instructor consent

**GEOL 4091. Geologic Problems and Research.** (1-2 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer) Individual research in lab or field problems. pre-req: instructor consent, no grad credit

**GEOL 4095. Special Topics: (Various Titles to be Assigned).** (1-3 cr. [max 9 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Topics not covered in regular curriculum. Topic announced before course offered.

**GEOL 4180. Teaching Assistant Experience.** (1-2 cr. [max 4 cr.]; S-N only; Every Fall & Spring) Participation in teaching Geological Sciences lecture and lab courses, including preparation of material, instruction, and student interaction. pre-req: Geol core, geological sciences major, instructor consent; max 2 cr can be applied toward geological sciences major; no grad credit

**GEOL 4201. Introduction to Watershed Hydrology.** (3 cr.; A-F or Audit; Every Spring) This course provides an introduction to the hydrologic cycle and water processes in the context of wildland watersheds. The course will cover the major components of the hydrologic cycle, including precipitation, canopy interception, evapotranspiration, infiltration, soil water storage, runoff, streamflow, and groundwater flow. The impacts of watershed management on water quantity and quality will be discussed using regional, national, and global examples, with emphasis on solving real-world problems using hydrologic datasets. pre-req: CHEM 1153 or 1173, MATH 1290 or MATH 1296, minimum 60 credits

**GEOL 4355. Economic Geology.** (4 cr.; A-F or Audit; Fall Odd Year) Geologic description, distribution, and genesis of economic mineral deposits; processes leading to their formation; relationship to plate tectonics; exploration techniques and criteria for finding new deposits. Course fees assessed. pre-req: 2312 or grad student or instructor consent; credit will not be granted if already received for 4350 or 5350

**GEOL 4360. Geologic, Geophysical, and Geochemical Methods of Exploration.** (4 cr.; A-F or Audit; Spring Odd Year) Team-taught course will introduce various geologic, geophysical, and geochemical exploration methods used to locate and evaluate the economic viability of metallic ore bodies in a variety of geologic settings.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
In labs, students will develop skills in ore microscopy, drill core logging, and geophysical field methods. Case studies will be used to highlight various exploration methods and ore deposit types. prereq: 4350, Math 1290 or 1296 or instructor consent; no grad credit

**GEOL 4400. Astrogeology.** (3 cr.; A-F or Audit; Every Spring)

In this astrogeology course we will explore the formation and evolution of celestial bodies in our solar system such as planets and their moons, asteroids, comets, and meteoroids. Topics will include determining internal structure of planetary bodies, dynamical processes, how to read/write the surface record (geology) of various bodies and leverage that record to understand internal processes and planet evolution, and comparative planetology with the goal to understand first-order cause and effect of planetary dynamics. prereq: (PHYS 2012 or 2015 concurrent registration is required (or allowed) in 2016) or (GEOL 2120 or 2312), minimum 60 credits, (Geological Sciences or Physics major or graduate student) or instructor consent.

**GEOL 4450. Structural Geology.** (5 cr.; A-F or Audit; Every Fall)

Introduction to brittle and ductile deformation, including joints, faults, shear zones, and folds; deformation mechanisms; elementary stress and strain theory. Labs include geometric, structural, and kinematic analysis, and a group project. Course fee assessed. prereq: 2312 or instructor consent; credit will not be granted if already received for 3520

**GEOL 4500. Field Geology.** (6 cr.; A-F or Audit; Every Summer)

Geological mapping of sedimentary, igneous, and metamorphic terranes and of Quaternary deposits and landforms; topographic maps and aerial photographs, including preparation of geologic maps and cross sections, and map unit descriptions. prereq: 4450, department consent; no grad credit

**GEOL 4550. Tectonic Geomorphology.** (3 cr.; A-F or Audit; Spring Odd Year)

Consideration of how tectonics interacts with climate to sculpt the landscapes of mountains belts. Conceptual and quantitative modeling of landscape evolution to gain insights into the controls on elevation and relief of orogens. Analysis of topographic data sets to identify the statistical properties of landscapes and identify the signatures of feedback between surface processes and tectonics. prereq: 3210 or 3420 or Grad student or instructor consent

**GEOL 4710. Aqueous Geochemistry.** (4 cr.; A-F or Audit; Fall Even Year)

Principles of solution chemistry, with application to chemical weathering, acid deposition, rivers, lakes, and oceans. Use of chemical equilibrium software to examine complex real world problems. prereq: Math 1290 or Math 1297 and Chem 1152 or grad student or instructor consent; credit will not be granted if already received for 5710

**GEOL 4839. Coral Reef Geology.** (GLOBAL PER; 3 cr.; A-F or Audit; Spring Odd Year)

Field study on San Salvador, Bahamas focusing on the biological and geological studies of the coral reef complex and associated habitats of the Caribbean. We will examine the ecology and taxonomy of associated biota as well as the physical, chemical and sedimentary processes in coral reef environments. prereq: BIOL 1011 and 1012 or GEOL 1110 or IBS Grad student

**GEOL 5091. Geologic Problems.** (1-2 cr. max 4 cr.; Student Option; Every Fall, Spring & Summer)

Individual research in lab or field problems. prereq: Graduate student or instructor consent

**GEOL 5095. Special Topics: (Various Titles to be Assigned).** (1-3 cr. max 12 cr.; A-F or Audit; Fall & Spring)

Topics not covered in regular curriculum. Topic announced before course offered.

**GEOL 5100. Seminar.** (1-2 cr. max 4 cr.; Student Option; Periodic Fall & Spring)

Oral and written presentation on topics of current significance to geoscientists. Participation by department staff. prereq: instructor consent

**GEOL 5103. Geological Paleolimnology.** (3 cr.; A-F or Audit; Fall Even Year)

Geological aspects of freshwater systems: origins, tectonic and climatic settings of lakes, geophysical mapping, physical sedimentary processes, sedimentary geochemistry, and paleochronology. Particular focus on paleolimnology, the analysis of lake sediment to reconstruct past climate and environment. prereq: MATH 1296 or 1596, PHYS 1002 or 2015 or 2018, CHEM 1155 or 1175 or grad student

**GEOL 5201. Introduction to Watershed Hydrology.** (3 cr.; A-F or Audit; Every Spring)

This course provides an introduction to the hydrologic cycle and water processes in the context of wildland watersheds. The course will cover the major components of the hydrologic cycle, including precipitation, canopy interception, evapotranspiration, infiltration, soil water storage, runoff, streamflow, and groundwater flow. The impacts of watershed management on water quantity and quality will be discussed using regional, national, and global examples, with an emphasis on solving real-world problems using hydrologic datasets. prereq: CHEM 1153, MATH 1290 or 1296, or grad student

**GEOL 5210. Glacial and Quaternary Geology.** (4 cr.; A-F or Audit; Spring Even Year)

Analysis of past global change from climate proxy records in glacial ice, tree rings, ocean and lake sediments, ocean corals. Impact of ocean and atmospheric circulation on global climate. Sea level cycles, El Nino; human impact on global climate. Offered alternate years. prereq: instructor consent

**GEOL 5240. Physical Hydrogeology.** (4 cr.; A-F or Audit; Spring Even Year)

Introduction to concepts of fluid movement in Earth's crust and the interaction of rocks and water. Introduction to the hydrologic cycle, theory of flow through porous media, crustal-scale flow systems, role of fluids in the plate tectonic cycle. prereq: 2110, Phys 2011 or 2013 and 2014, Math 1296 or Math 1290 or grad student or instructor consent; credit will not be granted if already received for 4240

**GEOL 5250. Hydrogeology.** (4 cr.; A-F or Audit; Every Fall)

A quantitative introduction to hydrogeology and aquifer mechanics with emphasis on environmental applications, including, unsaturated flow, interaction between surface water and groundwater, wellhead protection, well hydraulics, inverse methods, and solute transport. Offered alternate years. prereq: Math 1296 and Math 1290 and (Phys 2011 or 2013 and 2014) or grad student or instructor consent; credit will not be granted if already received for 4250

**GEOL 5251. Well Hydraulics.** (3 cr.; A-F or Audit; Spring Odd Year)

Hydraulics of groundwater flow to wells: equations of flow; analysis of steady and non-steady radial flow; aquifer response to stress; analysis of monitoring well networks, pumping tests, and single-point aquifer performance tests. prereq: 2312, (Phys 2011 or 2013 and 2014), (Math 1296 or Math 1290), or grad student or instructor consent

**GEOL 5260. Fluvial Geomorphology.** (4 cr.; A-F or Audit; Fall Even Year)

Focuses on the physical processes operating in stream channels and watersheds including watershed-scale hydrology and topography in GIS; reach-scale fluid mechanics and sediment transport; and channel patterns, forms, and classification systems. Other topics included will be river history, human alterations to rivers, and river restoration efforts. prereq: 3210 or 3420, Math 1296, (Phys 2011 or 2013 and 2014) or Grad student status or instructor consent

**GEOL 5310. Advanced Petrology.** (3 cr.; A-F or Audit; Fall Odd Year)

Physico-chemical principles applied to origin of igneous and metamorphic rocks. Phase equilibria in important mineral systems. Lab study and interpretation of igneous and metamorphic rocks using petrographic microscope. (2 hrs lect, 2 hrs lab) prereq: 2312 or grad student

**GEOL 5321. Theory, Practice of Scanning Electron Microscopy and X-Ray Microanalysis in Lectures.** (3 cr.; A-F or Audit; Every Spring)

Presents the basic physics of scanning electron microscopy, including electron
GEOL 5330. Introduction to Geochemical Modeling and Mineralization Processes. (3 cr.; A-F or Audit; Spring Even Year)
An introduction to the concepts and techniques used in computer modeling to investigate geochemical reactions and associated mineralization processes used by geologists. Drill core 4240 or 4250, 4710 or grad student or instructor consent

GEOL 5355. Economic Geology. (4 cr.; A-F or Audit; Fall Odd Year)
Geologic description, distribution, and genesis of economic mineral deposits; processes leading to their formation; relationships to plate tectonics; exploration techniques and criteria for finding new deposits. Course fees assessed. prereq: 3326, 3150 or graduate student or instructor consent

GEOL 5360. Geologic, Geophysical, and Geochemical Methods of Exploration. (4 cr.; A-F or Audit; Spring Odd Year)
Team-taught course will introduce various geochemical, geophysical, and geochemical exploration methods used to locate and evaluate the economic viability of metallic ore bodies in a variety of geologic settings. In labs, students will develop skills in ore microscopy, drill core logging, and geophysical field methods. Case studies will be used to highlight various exploration methods and ore deposit types. prereq: 4350 or 5350, (Math 1290 or 1296 or grad student or instructor consent; credit will not be granted if already received for 4360.

GEOL 5450. Advanced Structure. (3 cr.; A-F or Audit; Fall Even Year)
Modern structural analysis: strain (paths, partitioning, history), tectony, displacement, deformation processes, (mesoscopic, grainscale, microstructures), and fabric evolution. Application of structural techniques to integrative problems (e.g., tectonics, hydrogeology, and planetary, sedimentary and economic geology). Offered alternate years. Course fee assessed, prereq: 2120, 4450, or grad student or instructor consent

GEOL 5480. Tectonics. (3 cr.; A-F or Audit; Spring Even Year)
Ancient and active plate-tectonic processes. Topics include tectonic theory, plate motions, evolution of divergent, convergent and transform margins, anatomy of orogenic belts, and neotectonics. Examines tectonic phenomena in the context of geological, geophysical and surficial processes. Offered alternate years, prereq: 2120, 4450, or grad student or instructor consent; credit will not be granted if already received for 4480

GEOL 5601. Introduction to Stream Restoration. (3 cr.; A-F or Audit; Fall Even Year)
This course provides an interdisciplinary overview of the background science essential to participate in a stream restoration project. Students will learn how to assimilate geologic hydrologic, and ecological data at the watershed and research scales to plan a restoration project and evaluate/critique existing stream restoration projects. prereq: Math 1290 or 1296 or 1596, PHYS 1001 or 2013 or 2017, minimum 60 credits or graduate student or instructor consent

GEOL 5603. Stream Crossing Design. (2 cr.; A-F or Audit; Fall Odd Year)
Overview of road-stream crossing design with emphasis on stream simulation for aquatic organism passage. Includes field data collection, analysis, and design of road-stream crossings. Meets concurrently with CE 5203. CE 5203 includes additional work on traditional culvert hydraulics and design, pre-reg: GEOL 3210 or 3420 or 5260 or 5601 or BIOL 5833 or CE 3225 and instructor consent

GEOL 5730. Geochronology. (3 cr.; A-F or Audit; Spring Odd Year)
Covers both radiometric and non-radiometric methods of dating primarily Earth but also solar-system materials (meteorites). The chronometers discussed will cover a range of timescales, from early solar-system history to recent-human-influenced history. Offered alternate years. prereq: 2311, one year of college chemistry or grad student

GEOL 5815. Exploration Geophysics. (4 cr.; A-F or Audit; Fall Odd Year)
Review of principle geophysical techniques used in the exploration industries. Emphasizes the application of these techniques for solving near-surface problems. Includes review of case histories and group projects. prereq: 1110, Math 1297 or grad student or instructor consent; credit will not be granted if already received for 4805 or 4815

GEOL 5820. Global Geophysics. (3 cr.; A-F or Audit; Fall Even Year)
Build upon material presented in 2120, exploring the contribution of geophysics to our understanding of the Earth and the processes that control its appearance and behavior. Offered alternate years. prereq: 2120, Math 1290 or 1296 or grad student, instructor consent; credit will not be granted if already received for 4820

GEOL 8094. Geologic Research. (1-6 cr.; A-F or Audit; Every Fall & Spring)
Individual research. prereq: instructor consent

GEOL 8100. Seminar. (1-2 cr.; max 6 cr.; S-N or Audit; Every Fall & Spring)
Oral and written presentations on topics of current significance to geoscientists. prereq: Graduate geology major or instructor consent

GEOL 8200. Professional Issues in Earth and Environmental Science. (1 cr.; S-N or Audit; Every Fall)
Introduces the incoming graduate student in geological sciences to professional practice, standards and ethics, including peer review, proposal writing, ethical problems, the purpose of a university. prereq: Graduate student or instructor consent

GER 1101. Beginning German I. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Communicative course for students with little or no previous study of German. Cultivation of the four modalities of language acquisition (speaking, listening, reading, writing). Development of intercultural competency. Taught primarily in German. prereq: Little or no prior formal study of this language, or instructor consent

GER 1102. Beginning German II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Communicative course for students with limited previous study of German. Cultivation of the four modalities of language acquisition
GER 1201. Intermediate German I. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Consolidation and enrichment of previously acquired abilities in four modalities (speaking, listening, reading, writing), set within contemporary culture of German-speaking societies. Further development of intercultural competency. Taught in German. Prereq: 3-4 years high school German or 1102 or instructor consent

GER 1202. Intermediate German II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Consolidation and enrichment of previously acquired abilities in four modalities (speaking, listening, reading, writing), set within contemporary culture of German-speaking societies. Further development of intercultural competency. Taught in German. Prereq: 4 years high school German or 1201 or instructor consent

GER 2040. Berlin: Myth, Legend and Reality. (HUMANITIES; 3 cr.; A-F or Audit; Summer Odd Year)
Analysis of Berlin from the turn of the 20th century to today, through films, music, texts and essays. The importance of Berlin in German and European historical, political and social developments. Taught in English.

GER 2301. Advanced German. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Development of German literacy within a culturally authentic contemporary context. Emphasis on practical writing and formal oral and aural communication skills; vocabulary building; enhancement of reading skills; review of key grammar. Taught in German. Prereq: 5 years high school German or 1202 or instructor consent

GER 2315. German Film: History and Analysis. (FINE ARTS; 4 cr.; A-F or Audit; Every Summer)
Introduction to important films produced by German, Austrian and Swiss filmmakers and the art of film analysis, and to the relationship between film, society and culture. Taught in English.

GER 2402. Germany Today. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Survey of culture, politics, and society of Germany and German-speaking countries, beginning with post World War II era and emphasizing the European Union's emergence and Germany's role in contemporary Eastern Europe. Taught in English.

GER 3040. German Culture in Germany - Study Abroad. (GLOBAL PER; 4 cr.; A-F only; Periodic Summer)
Study of German culture, both contemporary and past as it informs the present, on site in Germany. Conducted entirely in German, and all language skills will be inculcated and improved. Format will include seminar, discussions, field trips, and small group projects. Pre-req: instructor consent & completion of GER 1202 or higher; also visit the UMD Study Abroad office

GER 3302. Advanced Composition and Conversation. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Refines students' skills in oral and written expression within cultural context. Further emphasis on formal oral and aural communication skills: vocabulary building; enhancement of reading skills; advanced grammar. Prereq: 1202 or 2301 with grade of C or higher or instructor consent

GER 3401. Texts and Contexts in German Speaking World. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring)
Focuses on the literature and culture of the 19th century to today, through films, music, texts and essays. Taught in German. Prereq: 1202 or 2301 with grade of C or higher or instructor consent

GER 3403. Page and Stage: German Theater and Performance. (FINE ARTS; 4 cr.; A-F or Audit; Every Fall & Spring)
Introduction to basic theories of drama and performance, survey of major German dramatists and current stage practices in Germany. Emphasis on class discussion and writing. Taught in German. Prereq: 1202 or 2301 with grade of C or higher or instructor consent

GER 3407. Sustainability in German-speaking Cultures. (SUSTAIN; 4 cr.; A-F or Audit; Periodic Fall)
Techniques and tools for understanding and writing about German poetry, fiction, and drama both as literary texts and as cultural testimony. Emphasis on class discussion and writing. Taught in German. Prereq: 1202 or 2301 with grade of C or higher or instructor consent

GER 3591. Independent Study. (1-4 cr.; [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Students develop and carry out reading and research programs in consultation with the instructor. Prereq: instructor consent & completion of GER 1202 or higher; also visit the UMD Study Abroad office

GER 4305. German Cinema. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
An introduction to the history of German cinema and to film analysis with a focus on the relationship among German film, history, literature, culture, and politics. The course will examine representative works from various cinematic periods. Taught in German. Prereq: 1202 or 2301 with grade of C or higher or instructor consent; no grad credit

GER 4404. Contemporary Germany. (GLOBAL PER; HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
Civilization, culture, and politics of Germany and German-speaking countries since 1945. Research term paper in German. Prereq: 1202 or 2301 with grade of C or higher or equivalent or instructor consent; no grad credit

GER 4502. German Modernisms: From Vienna to Berlin. (HUMANITIES; 4 cr.; A-F only; Fall Even Year)
Focuses on the literature and culture of the two major centers in German modernisms: fin de siècle Vienna and Weimar Berlin. Both cities were the site of intellectual and aesthetic
upheavals that challenged traditional notions of the subject, representation, class, gender, and technology. Examines major thinkers, writers, artists, and movements in German speaking areas between 1890 and 1933. Taught in German, prereq: 1202 or 2301 with a grade of C or higher or instructor consent; no grad credit

GER 4591. Independent Study. (1-4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall) Students must take the carry out reading and research programs in consultation with the instructor. prereq: instructor consent

Graduate School (GRAD)

GRAD 999. Graduate School Active Status. (; 0 cr.; No Grade Associated; Every Fall, Spring & Summer) A zero-credit registration mechanism for Grad School students who must register solely to meet the Grad School's registration requirement. Registration requirements established by departments and agencies within or outside the University (which include, but are not restricted to registration required to hold an assistantship, athletic eligibility, maintain legal visa status or defer loans) are NOT met by Grad 0999. prereq: Grad Students only with department permission to add or drop

Graduate Summer Research (GRD)

GRD 4999. Graduate Summer Research. (; 0 cr.; No Grade Associated; Every Summer) Graduate Summer Research

Health (HLTH)

HLTH 1100. Health and Wellness Strategies for Life. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) A lecture series introducing students to health and wellness encompassing nutritional, physical, emotional and spiritual aspects of health and well-being with emphasis on behavioral, environmental and social influences on developing a satisfying and productive lifestyle in our society.

HLTH 1104. Health Science Terminology. (; 3 cr.; [max 9 cr.]; A-F or Audit; Every Fall, Spring & Summer) Terms commonly used in health sciences and medical professions; emphasis on word structure.

HLTH 1400. Alcohol and College Life. (; 1 cr.; A-F or Audit; Every Fall & Spring) Provides students with information about how alcohol and drugs affect college life, regardless of whether or not they choose to drink. Reinforces safety skills, emphasizes personal prevention strategies and responsible decision-making. Presents students with tips about how to navigate college life and be successful, including time management, getting involved on campus, and meeting new people. This class does not count toward sociology major or minor. prereq: freshman or sophomore status; credit will not be granted if already received for SOSC 1400

HLTH 1470. Human Nutrition. (NAT SCI; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Emphasis on chemical nature of dietary nutrients, physiological and metabolic aspects of human nutrition, effects of diet on human health, and global issues in health and nutrition.

HLTH 1600. Basic First Aid and CPR. (; 2 cr.; A-F or Audit; Every Fall & Spring) Basic skills and knowledge to respond correctly in first aid emergencies. Leads to American Red Cross Certification basic first aid and CPR certification.

HLTH 1650. CPR/AED for the Professional Rescuer. (; 1 cr.; A-F or Audit; Every Fall & Spring) Techniques of cardiopulmonary resuscitation involving one and two rescuers. Leads to American Red Cross Certification for infant/child/adult CPR and AED.

HLTH 1700. First Responder. (; 3 cr.; A-F or Audit; Every Fall & Spring) Principles of emergency response and accident prevention in the home and community. Leads to Red Cross first emergency responder certification.

HLTH 2030. Applied Human Anatomy. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Study of the structure and function of the human body covering the cells and tissues of the integumentary, skeletal, muscular, nervous, circulatory, respiratory, digestive, urinary, and reproductive systems. Laboratory experiences employ videos, models, skeletons, and pre-dissected human prospections. Intended for athletic training, exercise science, health education and physical education majors as well as other health related professions. prereq: exercise science or physical education or public health and promotion or environmental and outdoor education major or candidate, [Biol 1001 or Biol 1011 or Biol 1013] and one semester college chemistry; credit will not be granted if already received for Biol 1761

HLTH 2040. Human Physiology. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Physiological mechanisms of cells, organs, and organ systems; function, control, and coordination of body systems. prereq: Minimum 30 credits, BIOL 1001 or 1011 or 1013; one semester college chemistry or instructor consent

HLTH 3000. Program Administration in Public Health. (3 cr.; [max 6 cr.]; A-F or Audit; Every Spring) Theoretical and practical basis of administrative process and organizational structure of HPER programs. prereq: Major in Health Education or Public Health Education and Promotion or Exercise Science or Physical Education or Recreation or instructor consent; credit will not be granted if already received for HPER 3000

HLTH 3101. Community Health. (; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Health promotion and disease prevention at local, state, and national levels. Comparison between health problems of individuals and those of groups. Analysis of functions and roles of voluntary and official agencies. Exploration of community-based programs. prereq: Minimum 30 credits

HLTH 3115. Consumer Health Education. (; 3 cr.; A-F or Audit; Every Fall & Spring) Overview of concepts of marketing, analysis, selection, and decision making regarding health care, products, services, and providers. prereq: Minimum 30 credits

HLTH 3116. Principles of Epidemiology and Human Disease. (3 cr.; A-F or Audit; Periodic Spring) Discussion of diseases and distribution among people. Topics include epidemiological concepts of how diseases are transmitted, surveillance and outbreak investigations, and prevention to eliminate diseases in the community. Vital statistics and methods of tabular-graphical data will be explored. prereq: Minimum 45 credits

HLTH 3117. Principles of Sex Education. (3 cr.; A-F or Audit; Every Spring) Planning and implementing comprehensive sex education programs in various settings. Sexual physiology, sociocultural aspects of sexuality, birth control, prevention of STDs/ HIV, teen pregnancy, and other current topics. How community and family values affect sex education. prereq: Health Education major or Public Health Education and Promotion, minimum 45 credits or instructor consent

HLTH 3118. Women's Health Issues. (3 cr.; A-F or Audit; Every Fall & Spring) Survey of American women's health issues. Role of women as patients and as health care providers. Language, politics, and economics of women's health care. Comparison of American women's health status to that of women around the world. prereq: Minimum 30 credits

HLTH 3200. Research and Evaluation in Health Science. (3 cr.; [max 6 cr.]; A-F or Audit; Every Fall & Spring) Exploration of the principles of investigation and evaluation in the health and human service professions with emphasis on methods, data analysis and presentation, and evaluation reports. Basic background information for scientific inquiry and use of evaluative data in health and human service programs. prereq: Minimum 60 credits, Health education major or Public Health Education and Promotion major or minor or recreation/outdoor education major or minor or instructor consent; credit will not be granted if already received for HPER 3200

HLTH 3202. Drug Education. (; 2 cr.; A-F or Audit; Every Fall, Spring & Summer) Physiological and psychological effects of alcohol, tobacco, and other drugs. Survey of societal causes and effects of drug use and abuse. Reasons and pressures for drug use by students. Appraisal and assessment of teacher's role in education, intervention, and treatment of drug abuse. prereq: 45 credits, for students seeking and admitted to the STEP (Secondary Teaching Education program), major in health education, public health education and promotion, physical education,
exercise science and communication sciences and disorders or instructor consent.

**HLTH 3300. Public Health Communication. (4 cr.; A-F or Audit; Every Fall)**
Technology applications for health educators in community settings. Develops basic, intermediate, and advanced skills in software, web, and other current technologies used in developing effective health education interventions. prereq; minimum 30 credits; Health Ed or Public Health Education and Promotion major, pre or concurrent registration in 3301 or instructor consent

**HLTH 3301. Foundations of Public Health. (3 cr.; A-F or Audit; Every Fall & Spring)**
Health, philosophy, and theories of health education and promotion; introduction to the profession, professional organizations and literature. Responsibilities and competencies of health educators in various settings. Ethical issues, current and future trends in health education and promotion. prereq: 1100 and [preconcurrent registration in 3300 and Health Education Community concentration majors] or Health Education School concentration major or Health Education or Health Education or Public Health Education concurrent registration is required (or allowed) in Promotion major or minor or instructor consent

**HLTH 3302. School Health Education Methods and Materials. (3 cr.; A-F or Audit; Every Spring)**
Coordinated school health programming with a focus on comprehensive school health education for grades 5-12. Methods, strategies, and materials for effective teaching. Determining student's needs and interest, selecting content, planning curriculum, stating objective, developing learning opportunities, and evaluating student learning. prereq: 3301, Health Education or Public Health Education and Promotion major with school concentration or instructor consent

**HLTH 3303. Planning Community Health Interventions. (3 cr.; A-F or Audit; Every Fall & Spring)**
Introduction to planning models used in health education/promotion programming. Provides knowledge and skills necessary to assess, plan, and implement health education/promotion programs for multi-age populations. Includes needs assessment, community analysis and organization, program design, and implementation. prereq: Concurrent registration is required (or allowed) in 3301, Health Educ or Public Health Education and Promotion major or minor or instructor consent

**HLTH 3305. Community Health Methods. (4 cr.; A-F or Audit; Every Spring)**
Theory, methods and practice of community health education. Includes identification and prioritization of community health problems with emphasis on development and implementation of strategies to address these problems. Students will test these strategies within community and school settings. prereq: 3300, 3303, Health Ed or Public Health Education and Promotion major with Community concentration or instructor consent

**HLTH 3307. Conducting and Managing Worksite Health Promotion Programs. (3 cr.; A-F or Audit; Every Spring)**
How to design, implement, and evaluate worksite and employee health promotion programs. Exploration of current theories and practical application. Focus on employee needs assessment and risk appraisal, worksite health culture development, effective intervention planning, program evaluation and financial cost and benefits. prereq: 3303, Health Education or Public Health Education and Promotion major or minor or Exercise Science major or instructor consent

**HLTH 3341. Encountering Death and Grief: A Cross-Cultural Journey. (CDIVERSITY; 3 cr.; A-F or Audit; Periodic Spring)**
Grief, loss, death, dying, and bereavement in our society as understood by children, adolescents, and adults. Review of research and current literature; education program planning strategies for individuals associated with schools, agencies, organizations, or worksites. prereq; credit will not be granted if already received for 5341

**HLTH 3400. Facilitating Healthy Lifestyle Change. (3 cr.; A-F or Audit; Every Fall)**
Facilitate health behavior change for individuals and small groups. Emphasis on theories and principles of behavior change, health counseling ethics, interpersonal skills, and records management. Includes assessing, planning, implementing, and evaluating behavior change processes. prereq: 3301, Health Education or Public Health Education and Promotion major or minor or instructor consent

**HLTH 3500. Environmental Health. (3 cr.; A-F or Audit; Every Fall)**
Biological, ecological, and physiological aspects of the environment; concurrent effects on health of the community; and possible solutions to environmental problems. prereq: Health Education or Public Health Education and Promotion major, minimum 60 credits or instructor consent

**HLTH 3991. Independent Study. (1-6 cr.; A-F or Audit; Every Fall & Spring)**
Opportunity for upper-division students to undertake an independent project that would serve to further their knowledge base and/or professional competencies. prereq: instructor consent

**HLTH 3992. Readings in Health. (1-4 cr.; A-F or Audit; Every Fall & Spring)**
Directed independent study, readings, research, or projects in a particular area of interest. Degree program plan and project

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions
allowed prereq: LSBE candidate, prior major coursework and consent of internship director; no grad credit

HCM 5530. Legal Aspects of and Ethics in Health Care. (3 cr.; A-F or Audit; Every Fall)
Introduction to the legal and ethical environment of health services administration and offerings a current and historical overview of
legal regulation of the health care industry. prereq: MBA student or department consent

HCM 5550. Health Care Finance. (3 cr.; A-F or Audit; Spring Odd Year)
Covers finance issues related to healthcare organizations. Topics include: reimbursement analysis, understanding the nature of costs,
uncertainty, forecasting, service line profitability analysis, and preparation of operating and capital budgets. pre-req: MBA student or department consent

HCM 5570. Health Care Quality Management. (3 cr.; A-F or Audit; Every Fall & Spring)
Covers basic principles of quality and patient safety measurement and improvement in health care. Methods for measuring health
care and satisfaction as well as regulatory and accreditation requirements affecting quality of care in hospitals, nursing homes, and other
areas of health care will be discussed. prereq: 4520, LSBE candidate or approved Health Care Management minor or college consent; no grad credit

HCM 5580. Health Services Data and Analysis. (3 cr.; A-F or Audit; Every Fall & Spring)
Introduction to the types, use, and analysis of data in health services delivery and research. This includes electronic health record, claims,
and patient satisfaction data, as well as publicly available data sets. Topics include data organization, data sources available in
the health services, conceptualizing analysis, sampling, data validity and reliability, qualitative and quantitative data analysis, applying
research results, and communicating findings. prereq: 4520 or instructor consent, no grad credit

HCM 4510. Medical Sociology. (3 cr.; A-F only; Spring Even Year)
Introduction to common theoretical and empirical approaches used by sociologists to study health and illness. Social inequalities in
health and illness and the social processes that shape these experiences are the themes of the course. prereq: LSBE candidate or Health Care
Management minor or college consent, no grad credit

HCM 4520. Health Care Organization and Management. (3 cr.; A-F only; Every Fall & Spring)
Overview of current management issues in long term healthcare. Includes aging simulations, payment trends, insurance standards, HR, risk management, etc. pre-req: LSBE candidacy, HCM 4520

HCM 4530. Legal Aspects of and Ethics in Health Care. (3 cr.; A-F only; Every Fall)
Introduction to the legal and ethical environment of health services administration and offers a current and historical overview of
legal regulation of the health care industry. prereq: LSBE candidate or approved Health Care Management minor or college consent, Mgmt 3401 preferred but not required, no grad credit

HCM 4541. Principles of Health Policy. (1-3 cr.; A-F or Audit; Periodic Spring)
Introduces policy analysis tools and strategies. Analyzes health policy and health legislation in the United States. Provides historical and
political context for health policy formation. Experiential component at St. Paul Capital during spring break or May summer session. pre-req: LSBE Candidate or approved HCM minor, HCM 4520 instructor consent

HCM 4550. Health Care Finance. (3 cr.; A-F only; Spring Odd Year)
Covers finance issues related to healthcare organizations. Topics include: reimbursement analysis, understanding the nature of costs,
uncertainty, forecasting, service line profitability analysis, and preparation of operating and capital budgets. prereq: 4520, FMS3 3601,
HIST 1027. Introduction to Islam. (HUMANITIES; 4 cr.; A-F or Audit; Every Summer)
This course is an introduction to Islam delivered fully online through MOODLE. It starts with the history of the pre-Islamic Middle East, the life of the Prophet Muhammad; and the emergence of Islam. It follows the survey of the Qur'an and Traditions; the tenets of the faith, sectarian differences; gender and the family, and Islam's encounter with the Occident.

HIST 1200. World History to 1500: From Antiquity to the Age of Exploration. (GLOBAL PER, HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
This course surveys world history from the emergence and development of isolated settlements to the earliest trans-oceanic interactions in the sixteenth century. It will also introduce students to the various sources and analytic techniques historians use to reconstruct the pre-modern past. Major themes include the social, political, religious, and economic ramifications of intercultural exchange and conflict in the ancient and medieval periods.

HIST 1207. Dawn of Modern Europe. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
Early history of the modern era: Renaissance, Reformation, Age of Reason, French Revolution and its impact, Napoleonic era.

HIST 1208. Europe in the Modern Age. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring)
Over the course of the past two centuries, the map of Europe has undergone several dramatic transformations. Empires disappeared off the map while new types of states and regimes were created. The forces of industrialization, imperialism, and nationalism brought about dramatic political, economic, social and cultural changes. At the same time, Europe extended its reach over other parts of the world. In this course, we will study the developments that have shaped European history in this period in order to better understand how we arrived at where we are today. In doing so, we will consider the many meanings of "modernity" and the impact it has had on contemporary culture.

HIST 1304. US History Part I: 1607-1877. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
Evolution of the United States from colonial origins into a modern nation. Frontier and agrarian heritage, constitutional development, emergence of modern U.S. political system, expansion of democracy, and cultural diversity. Colonial period to 1877.

HIST 1305. US History Part II: 1865-Present. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall & Spring)
Historical roots of major challenges facing Americans today: global responsibility as a world power; the quest for political, economic, and social justice; and community and family changes in modern society; 1877 to present.

HIST 1310. Minnesota History. (; 4 cr.; A-F or Audit; Every Spring)
This course examines Minnesota's history from the pre-historic and Native American periods through European discovery and American settlement to the present. Topics include: geographic aspects of Minnesota; Native American groups in Minnesota; European exploration and the fur trade; initial American settlement; statehood; the Dakota conflict; the Civil War; the connection between Minnesotans and the natural environment; the Progressive Era and the 1920's; the Depression and World War II; and the state's economic, cultural, and political history since 1945.

HIST 1400. Modern World History from 1500 to present. (HUMANITIES, GLOBAL PER; 4 cr.; A-F or Audit; Fall Odd, Summer Even Year)
This course surveys the evolution of the world from relatively isolated regions around 1500 to the global interdependence whose trends continues to the present day. This course will examine the emergence of the interdependence among major civilizations, especially between the West and the East. This latest interaction was initiated by the European colonizations and sustained by the contributions of other civilizations. Major themes of the course include the social, cultural, political, economic, demographic, and environmental ramifications of the global interaction.

HIST 2315. Colonial Latin America. (4 cr.; A-F or Audit; Periodic Fall & Spring)
This course examines the history of colonial Spanish and Portuguese America from the pre-contact civilization of the Americas to independence in the early 19th century. Specific topics that will be studied include the pre-contact native societies, the wars of conquest; the ecological, cultural and economic effects of contact among Europeans, Africans, and indigenous inhabitants of the Americas; the role of missionaries the birth of syncretic religious systems (such as Condobole, Voodoo, and Santeria); colonial political structures; and labor systems including slavery.

HIST 2325. Muslim Societies. (; 4 cr.; A-F or Audit; Every Fall)
This course will be delivered partially online through MOODLE. Muslim Societies is an introduction to the cultural and religious bases of the societies in which Islam is the predominant faith. It covers Islamic origins; the career of Muhammad; believes; observances; and religious and socio-political issues of the present day. Prereq: credit will not be granted if already received for HIST 2525

HIST 2345. Science and Society: 1500 to Present. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Spring)
Explores a series of creative moments in development of science and scientific methods within their broader social and cultural contexts. Prereq: credit will not be granted if already received for HIST 2245

HIST 2350. Nutrition and American History. (HUMANITIES, SUSTAIN; 4 cr.; A-F or Audit; Every Fall & Spring)
This course is unique in its joint appeal to students of history and student of biology, as well students from other related fields in the humanities and the sciences. Students will be exposed to cutting-edge research linking the study of early American history, American Indian history, the history of American ecology, modern nutritional science, and the development of immunity to disease. Students will be required to understand the ways in which published scientific data and research can inform historical case studies of the encounter between colonial Americans, American Indians, and European from the fifteenth century to the twentieth century? and vice versa. Students will be introduced to contemporary debates on the relationship between nutritional science and human immunity, using the to understand the history of colonial American and American Indian health, farming, hunting, and ecology following European contact. These histories, in turn, will illuminate their reading of scientific papers and research. pre-req:

HIST 2350. Nutrition and American History. (; 4 cr.; A-F or Audit; Every Fall & Spring)
This course is unique in its joint appeal to students of history and student of biology, as well students from other related fields in the humanities and the sciences. Students will be exposed to cutting-edge research linking the study of early American history, American Indian history, the history of American ecology, modern nutritional science, and the development of immunity to disease. Students will be required to understand the ways in which published scientific data and research can inform historical case studies of the encounter between colonial Americans, American Indians, and European from the fifteenth century to the twentieth century? and vice versa. Students will be introduced to contemporary debates on the relationship between nutritional science and human immunity, using the to understand the history of colonial American and American Indian health, farming, hunting, and ecology following European contact. These histories, in turn, will illuminate their reading of scientific papers and research. pre-req:

HIST 2405. History of Chinese Culture. (; 4 cr.; A-F or Audit; Periodic Fall & Summer)
This course examines the history of Chinese culture from the beginning of Chinese civilization, ca. 16th century BCE to the Republican period (1912 - 1949). Through a
University of Minnesota Duluth Catalog

Christian religion from the first century to the intellectual, and political) development of the
Examination of the historical (social, cultural, to 1054.
HIST 3038. History of Christianity: Origins
not be granted if already received for HIST 3238
HIST 3035. The Bible & Ancient Near East. (4 cr.; A-F or Audit; Periodic Fall & Spring)
History of Ancient Near East from birth of civilization in Egypt and Mesopotamia (c. 3100 B.C.) to arrival of Alexander (330 B.C.). Review of the ancient cultures of Egypt, Babylonia, Assyria, the Hittites, Persia, Syria, and Palestine, prereq: Minimum 30 credits; credit will not be granted if already received for HMCl 3055 or CST 3055
HIST 3091. Directed Readings in History. (1-4 cr.; max 16 cr.; A-F or Audit; Every Fall, Spring & Summer)
By arrangement in the department: individual study of material below the research level or formal study of history at an accredited institution abroad. prereq: instructor consent
HIST 3095. Special Topics: (Various Titles to be Assigned). (1-3 cr.; max 15 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Special topics in history.
HIST 3097. Internship in History. (1-3 cr.; max 6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Supervised opportunity to pursue local or regional history under auspices of local museums, historical societies, commemorative commissions. Written and oral presentation of completed project. prereq: 60 credits, instructor consent
HIST 3099. Practicum in Teaching History. (3 cr.; max 6 cr.; A-F or Audit; Periodic Fall & Spring)
Assisting in teaching a 1xxx- or 2xxx-level history course; experience preparing course materials, advising students in learning about the grading process; experience in lecturing, and dynamic social life of Africa will be examined. We will discuss the importance of understanding Africa, and the important contributions the study of Africa has made to our knowledge of the world in which we live. We will give particular attention to how and why states form, were sustained and reproduced. In addition to considering the birth of humanity, we will look at state formation processes of ancient and pre-modern African states such as Nubia, Ancient Egypt, Ancient Ghana, the Empire of Mali, Songhai, Great Zimbabwe and the Swahili city-states. What makes these states states? What are the social needs of developments that give rise to political activities such as providing security, adjudicating disputes, creating laws and enforcing order? Are there identifiable patterns of relations with other peoples and states?
HIST 3035. Ancient Warfare From Alexander to Mohammad. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Warfare as the unifying theme in the social and cultural analysis of the impact Alexander the Great had on eastern Mediterranean development between 323 B.C. and 631 A.D. Alexander and his world, the formation of its three great religions, and the Alexandrian legacy of his achievement. prereq: Credit will not be granted if already received for HIST 3335 or HMCl 3335
HIST 3038. History of Christianity: Origins to 1054. (4 cr.; A-F or Audit; Every Spring)
Examination of the historical (social, cultural, intellectual, and political) development of the Christian religion from the first century to the
schism of 1054, with particular consideration of Eastern Christianity. prereq: credit will not be granted if already received for HIST 3238
HIST 3141. Ancient Rome: From Republic to Empire. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Outlines a four century period in which ancient Rome was an empire beginning after the Second Punic War of 201 B.C. Republican Rome struggled with external possessions and the wealth this provided for the ruling elite in their efforts to dominate the state. The failed reform movement of the Gracchi brothers guaranteed that a polarized society would continue. This led to the Roman Revolution and the establishment of the imperial dynasties, the first of which was created by Julius Caesar and his successors and Julio-Claudians. The Pax Romana was a direct outcome of the seizure of power by Julius Caesar and for the next two full centuries Rome governed a world that was larger than the continental United States. The signs of mismanagement, social stagnation, and military pressure at the end of the 2nd century A.D. in the reign of the philosopher-king Marcus Aurelius eventually led to a crisis that was both political as well as economic. prereq: Credit will not be granted if already received for HMCl 3041 or HIST 3041
HIST 3195. Special Topics European History (various titles to be assigned). (4 cr.; max 16 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
Topics on any period or area in the history of Europe not included in the regular curriculum.
HIST 3243. Europe in Crisis in the 20th Century. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Causes, conduct, and consequences of World Wars I and II from European perspective. Offered during day school and in Individualized Learning Program.
HIST 3244. Holocaust & Genocide in Europe in the 20th Century. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
The murder of six million Jews as well as hundreds of thousands of other innocent civilians by the Nazi regime during World War II remains one of the most horrific massacres in human history. This course will examine the circumstances and causes that led to the Holocaust, the mechanisms through which the genocide was carried out, and the consequences and responses to the Holocaust. We will consider the perspectives of victims, bystanders, perpetrators, collaborators and resisters, as well as the means of these categories themselves. Moreover, this course frames the Holocaust within the broader history of ethnic cleansing and genocide, posing important questions about modernity and threats faced by minority populations in our world today.
HIST 3250. Women, Peace and War. (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Feminist analysis of war and peace; debates regarding the gendered nature of war and peace; analysis of the interrelationships of patriarchy, masculinity, and militarism. Women's role in warfare as soldiers, mothers, wives, munitions makers, etc. and effects of war on women including disease, displacement, rape, trafficking and prostitution, etc. Feminism and peace: Feminist peace activism and peacemaking efforts. prereq: WS 1000 or WS 2101 or WS 3750 or WS 3775 or instructor
HIST 3264. Russian Empire under the Tsars: Russia under the Romanovs from Peter the Great to Lenin. (4 cr.; A-F or Audit; Periodic Fall & Spring)
The Romanov dynasty reigned in Russia for over 300 years and, despite the Romanovs' dramatic fall from power in the wake of the Revolution of 1917, was, by many criteria, one of the most successful dynasties in European history. This course will examine the economic,
HIST 3265. The Soviet Experiment: Russia, the USSR, and Contemporary Russia. (GLOBAL PER; 4 cr.; A-F or Audit; Every Fall) This course will cover the economic, political, social, and cultural changes within the Russian empire, the Soviet Union, and the Russian Federation over the course of the 20th century and into the 21st. Topics to be covered include the Russo-Japanese War, the revolutions of 1905 and 1917, Russian Civil War, Russia's industrialization and collectivization of land, Stalinism, the Great Patriotic War, the cold war, late Soviet culture, the collapse of the Soviet Union and Russian and Ukrainian Yeltsin and Putin. Throughout the semester, students will be working with a variety of primary and secondary sources in different media (textual materials, visual sources, and film). Thorough written and oral assignment, student will develop their critical reading, writing and speaking skills. Credit will not be granted if already received for HIS 2265 or 2365.

HIST 3310. Colonial America: The American Revolution. (4 cr.; A-F or Audit; Every Fall) This course studies the social and political values, ideas, and experiences of colonial and revolutionary America that underlay the eventual formation of the US Constitution. Particular attention is given to the different ways in which American settlers from varying social and ideological contexts reconceived their own past history/histories.

HIST 3313. Global Surf Culture - Study Abroad. (GLOBAL PER; 4 cr.; A-F only; Periodic Summer) Taught abroad. Surfing is one of the world's most popular cultural phenomena. Students will explore the intersections of surfing, war, and tourism, addressing how a pastime commonly associated with mindless pleasure has in fact been implicated in some of the major global developments of the last two hundred years. These include empire-building and the "civilizing mission" in nineteenth- and early-twentieth-century Hawaii's, modernization and economic development in the so-called Third World, the growth of international tourism following the Second World War, political mass movements and the anti-apartheid struggle. American foreign relations and Cold War cultural diplomacy, and the surf industry and corporate globalization. As a class taught in another country, the course will also cover the history of the U.S. foreign policy in that region. And it has an experiential component: to develop an appreciation for the subject and for why millions of people have planned their lives around the sport, students will learn to surf. The course will thus combine academic instruction with outdoor education. Pre-req: instructor consent, ability to swim; also visit the UMD Study Abroad office.

HIST 3315. Religion in Colonial America. (4 cr.; A-F or Audit; Every Spring) Examines the history of religion, in all its forms, during the period of Colonial America and the American Revolution. Special attention is given to the role of religion in the social and political changes of the colonies.

HIST 3318. Slavery, Lincoln and the Civil War. (4 cr.; A-F or Audit; Every Fall & Spring) Examines the Civil War and its causes, slavery, and the career of Abraham Lincoln.

HIST 3320. American Popular Culture, 1929 to the Present. (4 cr.; A-F or Audit; Every Fall) Examines the intersection of the American popular arts--especially film, music, the visual arts, and literature--with national and international politics and American public life from the Great Depression to the present.

HIST 3386. The United States and the World since 1898. (4 cr.; A-F or Audit; Every Fall) Examines United States foreign relations, political, economic, social, and cultural since 1898. Prereq: students will receive credit if 3384 (only) or 3385 (only) were taken; credit will not be granted if already received for 3384 and 3385.

HIST 3395. Special Topics The Americas (Various Titles to be assigned). (4 cr. [Max 16 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Topics on any period or area in the history of The Americas not included in the regular curriculum.

HIST 3396. The Vietnam War. (4 cr.; A-F only; Every Spring) Examines the Vietnam war as a transformative event in both the United States and Vietnam. It will cover the decades-long history of the conflict, and will address its legacies in U.S. foreign relations, domestic politics and culture, and Vietnamese life.

HIST 3463. History of Modern China. (4 cr.; A-F or Audit; Periodic Fall & Spring) China's history from the Opium War to the Great Proletarian Cultural Revolution and Deng Xiaoping's capitalist reform.

HIST 3465. Twentieth Century China Politics. (4 cr.; A-F or Audit; Every Spring) Examines Chinese history from the late Qing to the present with a particular attention on the Chinese political, legal, social, and diplomatic history. Teaches the various factors that gradually influenced the historical course of China, the important roles that the West and Japan played in shaping modern China, the causes and consequences of the numerous political movements in the early stage of the People's Republic of China, and China's recent massive reform efforts to prosperity.

HIST 3495. Special Topics East Asian History (Various Titles to be Assigned). (4 cr. [Max 16 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Topics on any period or area in the history of East Asia not included in the regular curriculum.

HIST 3505. Colloquium for Majors. (1 cr.; S-N only; Every Fall & Spring) Lecture and discussion groups on a variety of topics. Pre-req: History or teaching social studies major/minor, instructor consent

HIST 3525. Introduction to Historic Preservation. (4 cr. [Max 8 cr.]; A-F or Audit; Periodic Fall & Spring) This course examines the history and theory of historic preservation, focusing on the United States, but with reference to traditions and practices in other countries. The class is designed to examine the largely untold history of the historic preservation movement in this country, and explore how laws, public policies and cultural attitudes shape how we preserve or do not preserve the built environment. The class will give students a grounding in the history, theory and practice of historic preservation.

HIST 3535. Material Culture: from Object to History. (4 cr.; A-F or Audit; Periodic Fall & Spring) The course will investigate both the methods by which material culture can be harnessed for historical and social analysis and the significant genres or avenues of inquiry undertaken by scholars working with material culture sources. Students will gain familiarity with the most significant literature in material culture studies, major trends in material culture historiography, and the leading figures that have given the field its shape and direction.

HIST 3550. Africa and Her Early American Diaspora. (4 cr.; A-F or Audit; Periodic Fall) This course will examine the civilizations and people of Africa and her Diaspora in the Americas generally, and people of African descent in the United States in particular. This course begins with continental Africa from prehistoric times. We will look at state formation processes of ancient and pre-modern Africa states such as Ancient Egypt and Ethiopia, Ancient Ghana, Mali, Songhai. The course will continue to examine the tragedy of the Atlantic Slave Trade and the emergence of Africa's Diaspora throughout the Americas, and consider the tremendous contributions of people of African Descent in early American History, while considering the dynamics leading up to the American Civil War.

HIST 3515. Modern Africa. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Africa, 1800 to present. Colonial conquest and domination, African resistance, nationalism, and problems of independence. Prereq: credit will not be granted if already received for HIST 3515.

HIST 3516. Society and Culture in 20th-Century Africa. (4 cr.; A-F or Audit; Periodic Spring) Generational, class, and gender conflicts in the wake of European occupation, impact of colonial and neocolonial domination, and African responses to that occupation and to the
world economy in the 20th century; selected films and literary sources. prereq: credit will not be granted if already received for HIST 3516

HIST 3695. Special Topics African History (various titles to be assigned). (4 cr. [max 16 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
Topics on any period or area in the history of African history not included in the regular curriculum.

HIST 3720. Iran: History, Politics, and Culture. (4 cr.; A-F or Audit; Periodic Spring)
This course covers 1,200 years of Iranian history, politics and culture. Because Iran has exerted a substantial influence on world history, this course will provide an overview of that history and culture from the Arab Conquests (c. 641) to the Iran-Iraq War (1980-1988). Covering sixteen centuries, the scope of this course will be necessity concentrate on the formative aspects of Iranian history: the first half of the course brings us up to the early modern period (1700); the second half concentrates on the modern period (1800’s-1990). Throughout the course, the history of Iran will be placed in the greater context of world history.

HIST 3726. Modern Middle East: 18th Century-Present. (4 cr.; A-F or Audit; Every Spring)
This course delivered partially online through MOODLE focuses on Middle Eastern history from the eighteenth century to the present. Nineteenth-century reform informs the course’s major theme; the rise of the nation state in the Modern Middle East. Geographically, the course covers the Arabic-speaking regions, Turkey, Iran, and Israel.

HIST 3795. Special Topics Middle Eastern History (various titles to be assigned). (4 cr. [max 16 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
Topics on any period or area in the history of the Middle East not included in the regular curriculum.

HIST 3825. Islamic History from Muhammad to the Ottomans. (4 cr.; A-F or Audit; Every Fall)
This intermediate level class on Islamic history is offered partially online. It covers the periods from ca. 570 to 1600 C.E. It includes an examination of the political leadership of the Prophet; the development of the caliphate and Community; sectarian differences; the rise of the independent states; military and land tenure practices; social history; the influx of Turks, Mongol and Timurid invasions; and ends with the Ottoman and Safavid dynasties, prereq: minimum 30 credits; credit will not be granted if already received for HIST 3725

HIST 3939. Europe in the Age of Renaissance and Reformation: 1348-1648. (4 cr.; A-F or Audit; Every Fall)
Social, economic, political, and cultural development of Europe from the Black Death to the Thirty Years’ War. Central themes include Renaissance humanism and art, Columbus and European expansion, the Protestant and Catholic Reformations, and the era of religious wars. prereq: credit will not be granted if already received for HIST 3239

HIST 3940. Early Modern England: 1485-1689. (4 cr.; A-F or Audit; Periodic Spring)
Early Modern English society and culture from the 15th to the 17th centuries. prereq: credit will not be granted if already received for HIST 3240

HIST 4727. Middle Eastern History Through Film. (4 cr.; A-F or Audit; Every Spring)
Explores topics in Middle Eastern history-religious, political, social, and cultural-from the rise of Islam to the present through film. prereq: 30 credits, no grad credit; credit will not be granted if already received for HIST 4527

HIST 5094. Directed Research. (4 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Directed Research prereq: instructor consent, maximum 4 credits may be applied to grad program

HIST 5905. History Seminar. (4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall & Spring)
Advanced study and individual research on a selected historical topic or theme; senior capstone course for history majors. (2.5 hrs lect, 1 hr student/faculty consultation) prereq: instructor consent

Honors (HON)

HON 1101. Honors Freshman Seminar. (2 cr.; A-F or Audit; Every Fall & Spring)
Exploration of the intersection of the sciences, humanities, and social sciences through analysis of academic and popular writings in journals, books, newspapers, and other popular media including film. Evaluate the social, cultural, and historical background of ideas and current events to develop in-depth understanding and hone critical thinking skills. Assess the impact of past and current events on perceptions of other societies, cultures, and religions. Examine the use of written, oral, and visual techniques to convey a particular opinion or point of view.

HON 3095. University Honors Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 12 cr.]; A-F or Audit; Every Spring)
Special topics in support of the UMD Honors Program. Topic will be announced before course is offered. prereq: Honors Student

HON 3305. University Honors French Cuisine Exploring French Culture Through Food. (GLOBAL PER,HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring)
This course is taught in English, will use food as an entry point into a deeper exploration of French identity, including analysis of important contemporary issues related to gender, class, and sustainability. Students will study the ways in which French society has sought to establish order and symmetry around the table, a focal point of French society, and the many points of creative resistance to that order. pre-req: University Honors student

HON 3595. University Honors Special Topics: (Various Titles to be Assigned). (HUMANITIES; 1-4 cr.; A-F or Audit; Periodic Fall & Spring)
Special topics in support of the UMD Honors Program. Topic will be announced before course is offered. prereq: Honors students, 60 credits and instructor consent; no grad credit

HON 4095. University Honors Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 12 cr.]; A-F or Audit; Every Spring)
Special topics in support of the UMD Honors Program. Topic will be announced before course is offered. prereq: Honors students, 60 credits and instructor consent; no grad credit

Industrial Engineering (IE)

IE 3115. Operations Research. (4 cr.; A-F or Audit; Every Spring)
This course prepares students to formulate optimization models in the formats of linear programming, network programming, integer mixed linear programming, goal programming, multi objective programming and nonlinear programming models; understand the simplex algorithm and solve simple linear programming models by hand; implement complex models and solve them using computer software; and interpret and communicate final results. prereq: Math 3280, Stat 3411, BSIE candidate or instructor consent

IE 3122. Materials Engineering Laboratory. (2 cr.; A-F only; Every Fall & Spring)
ASTM standards for testing metals, polymer, ceramic, and composite materials. Measurement of material properties including: yield strength, tensile strength, stiffness, hardness, toughness, and hardenability. Traditional methods of processing materials including: punching, plastic injection molding, thermoforming, sand casting, sheet metal forming, extrusion, welding, polymer matrix composites vacuum bagging. Heat treatment and metallographic study of metals. Estimation of the effects processing techniques have on material properties using both analytical and empirical techniques. Use of Design of Experiments approach for estimation of process control factor effects and modeling of process quality characteristics. Detailed lab report writing and oral presentation of results. prereq: ENGR 1222, BSIE or BSME candidate, concurrent registration in 3130

IE 3125. Engineering Economic Analysis. (SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring)
Data analysis and methods for engineering decision making under risk; using time and value of money concepts; and using expectation principles for project selection. prereq: Statistics 3411 or 3611, engineering candidate or instructor consent

IE 3130. Materials Processing Engineering. (3 cr.; A-F only; Every Fall & Spring)
An introduction to common materials processes and material responses, including thermal and mechanical processing of metals, polymers and composite materials. prereq: Engr 2110
or ME 2105, Engr 2016 or CE 2017, Stat 3411 (concurrent registration is allowed) and BSIE or BSME or BSEP candidate

IE 3140. Human Factors and Ergonomic Design. (3 cr.; A-F only; Every Fall)
Through the study of perception, cognition, and motor performance, explores human abilities and limitations as well as the external factors impacting them. To improve performance of a human-machine system, learn about tools for analyzing products, identifying design elements to augment abilities, and recognizing limitations. prereq: B.S.I.E. candidate or instructor consent

IE 3222. Occupational Systems Laboratory. (1-2 cr.; A-F only; Every Spring)
Using principles of human factors and production management, introduces methods for assessing and optimizing performance of occupational systems (i.e., workers, workplaces and tasks, and tools and equipment). These methods are applied in laboratory exercises to evaluate effects of workplace factors on various performance measures. prereq: 3140, must be taken after or concurrently with IE 4020 or instructor consent; credit will not be granted if already received for 3105, 3265

IE 4010. Six Sigma Quality Control. (3 cr.; A-F only; Periodic Spring)
Statistical quality control in manufacturing: modeling, process quality, control charts, process capability, acceptance sampling methods, Six Sigma, Design of Experiments, and Lean Enterprise. prereq: Che 2011 or Stat 3411 or 3611, engineering candidate, no grad credit

IE 4020. Lean Production Management. (3 cr.; A-F only; Every Spring)
Develops management systems using lean methods: JIT, CMS, ERP, SCM, TQM, SMED, and Kaizen Techniques. Forecasting, aggregate planning, inventory management, and other facilities improvement techniques, including efficient scheduling of manufacturing and service systems. prereq: pre-req or co req: 3125 or Che 4501 or instructor consent, no grad credit

IE 4115. Facility Planning and Simulation. (4 cr.; A-F or Audit; Every Fall)
Facility and process design and analysis using flow rates, design relationships, graphical aids, and computer simulation. prereq: 4010, 4020, BSIE candidate

IE 4196. Cooperative Education I. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring)
Practical work experience with employer closely associated with student's academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Requires more than 15 hours per week of company work. pre-req: ME 4196 or 4197 or IE 4196 or 4197 and instructor consent

IE 4197. Industrial Engineering Internship. (1 cr.; A-F or Audit; Every Fall, Spring & Summer)
Advanced practical work experience with employer closely associated with student's academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Requires more than 15 hours per week of company work. pre-req: upper division student and instructor consent; no grad credit

IE 4222. Systems Integration Laboratory. (2 cr.; A-F only; Every Fall)
Design, programming, and implementation of part or all of an automated and integrated manufacturing, testing, packaging, or distribution system. prereq: must be taken after or concurrently with IE 4230 or department consent, no grad credit

IE 4230. Systems Integration. (3 cr.; A-F only; Every Fall)
Study of the hardware and software aspects of many devices, subsystems, and computers used in modern automation, and their integration into automated manufacturing, packaging, and distribution systems. prereq: 4020 or ME 3140, ECE 2006, CS 1121 or CS 1131 or CS 1511 or CS 2121, BSIE candidate or instructor consent

IE 4255. Multidisciplinary Senior Design. (4 cr.; A-F or Audit; Every Fall & Spring)
Capstone design course in industrial engineering. Project Management, problem definition, root cause analysis, baseline analysis, alternative solutions, analysis, reporting. Societal, economic, ethical, environmental, political considerations. Oral and written reports. Work is in teams focused on industrial, research, or competition-based projects. prereq: EMgt 4110, BSIE candidate, or instructor consent, no grad credit

IE 4296. Cooperative Education II. (2 cr.; A-F or Audit; Every Fall, Spring & Summer)
Advanced practical work experience with employer closely associated with student's academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. prereq: 4196 or ME 4196; no grad credit

IE 4297. Industrial Engineering Internship. (2 cr.; A-F or Audit; Every Fall, Spring & Summer)
Advanced practical work experience with employer closely associated with student's academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports with final written report must be submitted to department. Requires more than 15 hours per week of company work. pre-req: ME 4196 or 4197 or IE 4196 or 4197 and instructor consent

IE 4491. Independent Study. (1-4 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Directed individual study arranged with instructor and department head before registration. prereq: BSIE or BSME candidate, department consent

IE 4495. Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 32 cr.]; Student Option; Fall Odd Year)
Topics not available in regular department curriculum. May involve specialties of department or visiting faculty. prereq: BSIE candidate or instructor consent

IE 4993. Industrial Engineering Seminar. (1 cr. [max 2 cr.]; S-N or Audit; Every Fall & Spring)
Reports on recent developments in engineering and on research projects in the department. prereq: BSIE or BSME or BSEP or BSME or MEHS candidate or instructor consent; no Grad credit

IE 5305. Supply Chain Management. (3 cr.; A-F or Audit; Fall Even Year)
Concepts essential to understanding supply chain management, including strategy and design, as well as operational, managerial, technological, and implementation issues. It provides an integrated perspective of the supply chain, including purchasing, production, transportation, distribution and information systems. prereq: 4020, BSIE candidate or MSEM student or instructor consent

IE 5315. Organizational Control Methods. (3 cr.; A-F or Audit; Spring Odd Year)
Roles of the engineer in managing organizational resources. Budgeting, cost-volume relationships, product costing, annual reports, audits. Project estimating and reporting. prereq: BSIE or MSEM candidate or department consent

IE 5325. Advanced Engineering Economics. (3 cr.; A-F or Audit; Spring Even Year)
Fundamentals of engineering economics: decision trees, time value of money, analysis of alternatives for project investments, taxes, inflation. Applications to engineering services and manufacturing. prereq: 3125, BSIE or MSEM candidate or department consent

IE 5335. Engineered Products and Services. (3 cr.; Student Option; Fall Odd Year)
Development, production, and distribution of engineered products and services. Strategies for positioning engineered products and services to successfully compete in a global market. Sales, purchasing, qualification, and service. Standards, regulations, prereq: BSIE or MSEM candidate, instructor consent

IE 5991. Independent Study in Industrial Engineering. (1-4 cr. [max 6 cr.]; Student Option; Every Fall, Spring & Summer)
Directed study of special interest topics not available in standard curriculum. Must be arranged with instructor before registration. May include readings, research and/or special projects. prereq: MSEM candidate, department consent

INT 1100. Linked Sections of College Writing and UMD Seminar. (4 cr.; A-F or Audit; Every Fall)
Pairing of UST 1000, facilitating the successful transition into college learning and student life at UMD and WRIT 1120 of instruction and practice in developing information literacy and skills in critical thinking, argumentation, revision, and documentation to prepare
students for writing tasks they will encounter throughout college, work, and the rest of their lives. Course assignments present challenges designed to hone competence and confidence in making writing choices for any audience, purpose, or genre; pre-req: Students speaking English as a second language must have TOEFL score of 550; credit will not be granted if already received for WRIT 1120 and UST 1000.

Integrated Biosciences (IBS)

IBS 5101. Biochemistry and Molecular Biology. (3 cr.; A-F only; Every Spring) A thorough review of the structure and properties of biomolecules including a complete understanding of the components and macromolecules that comprise nucleic acids, proteins, carbohydrates, and lipids. pre-req: Chem 4341 or equivalent

IBS 8011. Integrated Biological Systems I. (2 cr.; A-F only; Every Fall) This course introduces the student to integrating principles in biology to develop the type of integrated thinking expected in their thesis. Integrating principles to be covered include energy flow, information, stoichiometry, and feedbacks. This course will be delivered largely in lecture format. It will prepare the student for IBS 8013, an extension of this course in spring semester. In IBS 8013, the class will involve applications of these principles to problems and themes that cut across biological sciences and the applications of these principles to their thesis problem. pre-req: open to first year IBS Graduate Students only, calculus

IBS 8012. Integrated Evolutionary Processes. (2 cr.; A-F or Audit; Every Spring) Review of advanced topics in evolutionary biology, including coevolution, evolution of disease organisms, ecosystem consequences of evolution, evolutionary stable strategies, and game theory. Required for all IBS students. pre-req: IBS Grad student

IBS 8013. Integrated Biological Systems II. (2 cr.; A-F or Audit; Every Spring) This course follows IBS 8011. In IBS 8011, the students were introduced to four principles of integrative thinking in biology (energy, information, stoichiometry, feedbacks) that apply to all levels of biological organization. IBS 8013 will apply all four principles to various themes and problems in biology which cut across all levels of biological organization. Such themes include but are not limited to metabolism, disease, and movement of materials across membranes and boundaries. The course will emphasize readings and discussion of the primary literature, student led discussions, student presentations of how the integrating principles apply to their thesis research, and the preparation of a paper demonstrating this application. The papers will be handled in a mock peer-review as if they were submitted to one of the Trends journals (Trends in Ecology and Evolution, Trends in Biochemistry, etc.) pre-req: 8011, calculus

IBS 8020. Integrated Biosciences Colloquia. (1 cr. [max 4 cr.]; S-N only; Every Fall & Spring) Presentations by Integrated Biosciences Graduate Faculty on their research and how it is integrated with various other research programs in Duluth and worldwide. pre-req: IBS Graduate Student

IBS 8030. IBS Research Club. (1 cr. [max 5 cr.]; S-N or Audit; Every Fall & Spring) Readings and discussion of current literature integrating the areas of Cell, Molecular and Physiological Biology with Ecology, Organismal, and Population Biology. Current literature emphasizing the application of novel techniques to biological problems at several levels of organization will be presented. Students will lead a discussion on at least one paper. Required for IBS students in their first two years. pre-req: IBS Graduate Student

IBS 8094. Rotations. (1 cr.; S-N only; Every Fall & Spring) Rotations through laboratories of faculty members of the Integrated Biosciences Program. During the rotations students will be exposed to molecular, cellular, physiological, and ecological problems and techniques. pre-req: IBS Graduate Student

IBS 8099. The Biological Practitioner. (1 cr.; S-N or Audit; Every Fall) A course designed to introduce the incoming graduate student in biological sciences to professional practice, standards and ethics, including peer review, proposal writing, ethical problems, the purpose of a university, and other problems. Required for all IBS students. pre-req: IBS Graduate Student

IBS 8101. Cellular Biochemistry. (3 cr.; A-F or Audit; Every Fall) This course will introduce students to the physical and molecular basis of cellular function. Students will learn the physical characteristics of macromolecular structures comprising a cell, including polysaccharide, lipid, protein and nucleic acid structure. Students will also learn where these macromolecules occur in the cell, how they are regulated and how they facilitate the cells interaction/communication with its environment, with a focus on small molecule/drug distribution. pre-req: Organic Chemistry, Biochemistry, Cell Biology or Molecular Biology, Calculus or instructor consent.

IBS 8102. Cell, Molecular and Developmental Biology. (3 cr.; A-F only; Spring Odd Year) Comprehensive review of contemporary topics in modern molecular biology. This will include systemic examples from cell and developmental systems. Required for CMP emphasis. pre-req: 5101, Chem 4342 or equivalent, IBS grad student

IBS 8103. Comparative Animal Physiology. (3 cr.; A-F only; Spring Even Year) In depth review of selected topics in animal physiology. Lecture presentation of fundamental concepts of cardiovascular, neural, respiratory, renal, and endocrine physiology. In-depth discussion and student presentation of selected topics with particular emphasis on current advances. pre-req: One year of college biology, two years of college chemistry; 8011, IBS Grad student

IBS 8201. Ecological Processes. (4 cr.; A-F or Audit; Every Fall) In depth survey of advanced topics in ecological processes, including allometry and scaling, animal behavior, food webs, and energy and material flows through organisms and ecosystems. Required for EOP Track. pre-req: 8011, IBS Grad student

IBS 8202. Chemical Biology. (3 cr.; A-F or Audit; Every Spring) This course will introduce students to the common chemical underpinnings of biochemical and biological processes. Students will learn the chemical fundamentals of biological transformations including the synthesis of lipids, carbohydrates, amino acids, nucleotides as well as natural products. In addition, students will gain insight into the roles of metals in biology, medicine, bio-inorganic transformations, as well as energy - and electron-transfer processes associated with living organisms. pre-req: Organic Chemistry, Biochemistry or Cellular Biochemistry, Cell Biology or Molecular Biology, Calculus or instructor consent.

IBS 8203. Methods in Molecular Biosciences. (2 cr.; A-F or Audit; Every Spring) This course will focus on the fundamental and technical background of methods used in chemical biology toward quantitative assay/interpretation of biological structures/events. Importantly, case studies will be chosen from current literature to highlight applications of a given technique to address biological questions. For each major technique expected experimental information and subsequent interpretation will be discussed. pre-req: Organic Chemistry, Physical Chemistry, Biochemistry or Cellular Biochemistry, Cell Biology or Molecular Biology.

IBS 8333. FTE: Master’s. (1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) pre-req: Master’s student, adviser and DGS consent

IBS 8444. FTE: Doctoral. (1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) pre-req: Doctoral student, adviser and DGS consent

IBS 8666. Doctoral Pre-Thesis Credits. (1-6 cr. [max 12 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) pre-req: Doctoral student who has not passed preliminary oral; no required consent for 1st/2nd registrations, up to 12 combined credits; department consent for 3rd/4th registrations, up to 24 combined credits; doctoral student admitted before summer 2007 may register up to four times, up to 60 combined credits

IBS 8777. Thesis Credits: Master’s. (1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall, Spring & Summer)
IIES 888. Thesis Credit: Doctoral. (1-24 cr. [max 100 cr.]; No Grade Associated; Every Fall, Spring & Summer) 
(no description) prereq: Maximum 18 credits per semester or summer; 24 credits required

IIES 890. Special Topics: (Various Titles to be Assigned). (2 cr.; A-F or Audit; Every Spring) 
Explores topics relevant to both EPO and CMP students within the IBS Program. prereq: 8011, 8012, 8103

IIES 8993. Integrated Biosciences Graduate Seminar. (2 cr. [max 4 cr.]; A-F only; Every Spring) 
The IBS Seminar course will emphasize topics that cross multiple disciplines in both Ecology, Organismal and Population (EOP); Cell, Molecular and Physiology (CMP) emphases, and Chemical Biology (CB). Example of topics include the following: human health implications of ecological change; cell and molecular techniques in ecology; impact of infectious disease on populations; community ecology, and host defense against disease. prereq: 8012, 8103

Integrated Elem Special Educ (IESE)

IESE 1010. Introduction to Inclusive Education. (3 cr.; A-F or Audit; Every Fall & Spring) 
The elementary and special education teaching profession: developing personal goals; interaction with faculty and staff at school sites, along with a full-morning teaching experience; simulation of teaching strategies and methods related to hands on learning; overview of special education and associated processes; behavior management techniques; handwriting skills; emergent reading strategies. Weekly 2-hour field practicum. prereq: Pre elementary education student; credit will not be granted if already received for ELED 1010

IESE 2001. Diversity and Education Implications. (3 cr.; A-F or Audit; Every Fall & Spring) 
Examines issues of diversity related to planning instruction, classroom management, integrated and exploratory curriculum, utilization of technology, community resources, structured service learning and humanizing classroom environments. prereq: Pre-IESE Candidate, 1010; credit will not be granted if already received for ELED 2001

IESE 3325. Foundations of Literacy and Language. (3 cr.; A-F only; Every Fall & Spring) 
In the first of three required literacy courses, the teach candidates are introduced to the principles of comprehensive, scientifically-based literacy (reading, writing, speaking, and listening) instruction that includes phonemic awareness, phonics, fluency, vocabulary development, and comprehension. prereq: Admission to the IIESE program, successful completion of IIESE 3331; credit will not be granted if already received for ELED 3325

IESE 3326. Advanced Literacy & Language: Designing & Implementing a Comprehensive Literacy Program. (2 cr.; A-F only; Every Fall & Spring) 
Second in a sequence of three literacy courses, this course is designed to prepare teacher candidates to create and implement comprehensive and scientifically based literacy instruction in elementary school classrooms. prereq: Admission to IIESE program and successful completion of Blocks One and Two courses and associated field experiences; credit will not be granted if already received for ELED 3326

IESE 3331. Children’s Literature in the Elementary School. (3 cr.; A-F or Audit; Every Fall & Spring) 
The focus of this course is on literature for children, the criteria for selecting books and non-book materials for use in the elementary school, and the integration of children’s trade books across the curriculum. prereq: Pre-IESE, Sophomore standing, IESE 1010 and ECH 2025; credit will not be granted if already received for ELED 3331

IESE 3355. Critical Thinking Elementary Mathematics Methods I. (2 cr.; A-F only; Every Fall & Spring) 
First in a two-semester component required of all students planning to teach elementary education in the area of mathematics. Through discussion, projects, and reflection on readings we will study the nature of mathematics, how children learn mathematics, and how to most effectively teach and assess mathematics. prereq: Admission to the IIESE program and successful completion of Block One courses and associated field experience; credit will not be granted if already received for ELED 3355

IESE 3356. Elementary Mathematics Methods II. (3 cr.; A-F only; Every Fall & Spring) 
Second in a two-semester component required of all students planning to obtain certification to teach mathematics at the elementary level. Through discussion, projects, and reflections on readings we will study the nature of mathematics as it related to social justice, how to most effectively teach and assess mathematics, and the different ways to grade mathematics. prereq: Admission to IIESE program and successful completion of Block One courses and associated field experiences; credit will not be granted if already received for ELED 3356

IESE 4344. Teaching Science and Environmental Education I. (3 cr.; A-F only; Every Fall & Spring) 
This course is the first method course of elementary science teacher preparation. The emphasis of ELED 3344 is on enriching content knowledge, increasing confidence, as well as developing appropriate instructional skills, strategies, and attitudes for being a science teacher. Students will participate in extensive field experiences, learn and apply recommended methods for science instruction based on research and theory, and reflect upon their personal development and ability. prereq: Admission to IIESE program and successful completion of Block One courses and associated field experience; no grad credit; credit will not be granted if already received for ELED 4344

IESE 4346. Teaching Science & Environmental Education II. (2 cr.; A-F only; Every Fall & Spring) 
Advanced methods course of elementary science teacher preparation. Emphasis on designing curriculum, using appropriate teaching methodologies and assessments to measure student learning, as well as developing attitudes for being a science teacher. Presentation of contemporary perspectives in science education and finding solutions to problems in the classroom from the reform initiatives. prereq: Admission to IIESE program and successful completion of Blocks One and Two courses and associated field experiences; no grad credit; credit will not be granted if already received for ELED 4346

IESE 4366. Teaching Elementary Social Studies I. (3 cr.; A-F only; Every Fall & Spring) 
Study of the content and organization of social studies in elementary schools; planning instruction for diverse students; understanding and improving the learning situation and effective use of materials emphasizing historical and civil discourses. prereq: Admission to IIESE program; no grad credit; credit will not be granted if already received for ELED 4366

IESE 4367. Teaching Elementary Social Studies II. (2 cr.; A-F only; Every Fall & Spring) 
Explores inquiry-based models of instruction in social studies planning instruction for diverse students; conceptualizing and planning instructional units; and effective use of an array of instructional materials. prereq: Admission to IIESE program and successful completion of Block One courses and associated field experience; no grad credit; credit will not be granted if already received for ELED 4367

Inter-Institutional Cross-Reg (IICR)

IICR 1001. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) 
Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross registration agreement with the College of Saint Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. prereq: instructor consent

IICR 1002. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) 
Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-
interinstitutional cross registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 1003. Inter-Institutional Cross Registration. (1-9 cr.; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 1004. Inter-Institutional Cross Registration. (1-9 cr.; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 2001. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. prereq: instructor consent

IICR 2002. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 3001. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. prereq: instructor consent

IICR 3002. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 3003. Inter-Institutional Cross Registration. (1-9 cr.; Student Option; Periodic Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. prereq: No grad credit; instructor consent

IICR 4001. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. prereq: instructor consent

IICR 4002. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

IICR 5001. Inter-Institutional Cross Registration. (1-9 cr. [max 36 cr.]; Student Option; Every Fall & Spring) Inter-institutional cross-registration reflecting the credit hour load of University of Minnesota Duluth students enrolling under the inter-institutional cross-registration agreement with the College of St. Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists.

Interdisciplinary Studies (IS)

IS 2001. Sustainability Across Disciplines. (SUSTAIN; 4 cr.; A-F or Audit; Every Fall & Spring) An introduction to academic disciplines and interdisciplinary inquiry, with an emphasis on integrative, sustainable thinking. Includes case studies of real-world sustainable problem-solving, visits from disciplinary experts, and student-led design of interdisciplinary projects that focus on sustainability. pre-req: WRIT 1120

IS 3093. Senior Project. (1-10 cr.; A-F or Audit; Periodic Fall, Spring & Summer) An agreement that specifies nature of the project, amount of work, and number of credits must be approved by two advisers and filed with director of interdisciplinary studies. prereq: instructor consent; credit will not be granted if already received for IS 3099

International Business (INTB)

INTB 3211. International Business Down Under. (GLOBAL PER; 3 cr.; A-F or Audit; Every Summer) The course is designed to expose the students to as many aspects as possible of the Australian business and its environment so that they can learn how important it is to understand national differences, similarities, and implications for successful conduct of international business, as well as how doing business internationally is different from operating in the US. For that purpose,
this course provides a broad yet refined view of Australian business, culture, and other infrastructure by bringing the faculty members of the host university and local guest speakers to the class sessions, by taking field trips to companies and industries, by promoting interactions with local businesses and executives, and by various class activities such as reflections on field trips, projects, and presentations on what students have learned and experienced. pre-req: LSBE candidate or minimum 60 credits from other colleges with a minimum GPA of 2.6 and instructor consent

INTB 4201. Chinese Business and Economy. (GLOBAL PER; 3 cr.; A-F or Audit; Every Summer)
Introduction to Chinese business and economy. Provides fundamental knowledge of Chinese business and economy; provides students with understanding of social, cultural, economic and political environments of doing business in China through lectures, readings, hand-on project and travel to China. pre-req: LSBE candidate, consent of instructor

INTB 4221. International Study in Thailand. (3 cr.; A-F or Audit; Periodic Spring & Summer)
Learn about the health care system in Thailand in comparison to the U.S. health care system. Topics to be examined include health policy, health care reform and international exchange of healthcare providers, health care training and patients. Students will be expected to juxtapose the management of healthcare, cultural influences, and family resources and needs. pre-req: minimum GPA of 2.6, minimum 75 credits, instructor consent

INTB 4231. Peru’s Food Movement: The Links to Health, Development and Branding. (3 cr.; A-F or Audit; Every Summer)
The course provides an opportunity for students to learn and study the unique conditions that characterize the food movement in Peru. In particular, it creates a multidisciplinary study abroad experience by exploring the interconnections between food and economic development, health care, branding and international marketing and other aspects of economics and business. Meanwhile, students will explore first-hand how the growth in Peru’s food movement has important implications for the Peruvian economy, culture and national identity. pre-req: ECON 1022, 1023, GPA 2.5 or higher; no grad credit

JOUR 4495. Special Topics: (Various Titles to be Assigned). (1-3 cr.; max 9 cr.; A-F only; Periodic Fall, Spring & Summer)
Special, focused, and timely topics in globalization and international business. pre-req: instructor consent

INTS 4100. Seminar in International Studies. (1-6 cr.; minimum 50 credits, department consent; max 4 cr. may be applied to IntS major)
For students who want to take an independent study course while traveling or living in a foreign country. Course must be approved by supervising faculty member and director of international studies. pre-req: department consent

INTS 3191. International Internship. (1-6 cr.; max 15 cr.; S-N or Audit; Every Fall, Spring & Summer)
Supervised work experience involving international interaction. pre-req: minimum 50 credits, department consent; max 4 cr. may be applied to IntS major

INTS 4100. Seminar in International Studies. (4 cr.; A-F or Audit; Every Fall & Spring)
Analysis of and supervised research and writing on selected topics. pre-req: Pol 1050, 60 credits including 8 upper division credits approved IntS courses and instructor consent

JOUR 2001. Introduction to Journalism. (3 cr.; A-F or Audit; Every Fall & Spring)
Gateway course for journalism. Draws on a craft-based, digital-first approach to introduce students to fundamentals used by all journalists: information gathering, audience engagement, writing stories, basic news practices and ethics, news style, structure and readability, and interviewing techniques. Students also analyze various styles of journalism and talk about core theoretical concepts behind journalism and mass communication.

JOUR 2101. Journalist’s Toolbox. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Exposes students to the always-changing tools that can be used in journalistic storytelling. The course is designed for students interested in using these journalistic tools in myriad disciplines: journalism, public relations, marketing, design and various communication-related disciplines. pre-req: 2001, WRIT 1120; credit will not be granted if already received for 3101

JOUR 2300. Visual Journalism. (3 cr.; A-F or Audit; Periodic Fall & Spring)
An introduction to visual ways to tell stories in journalism. Class covers the basics of photojournalism production, ethics and photo editing. Also delves into the basics of media graphics and other visual displays of information. pre-req: Credit will not be granted if already received for 3300

JOUR 2400. Community and Journalism. (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Examines the role of journalism in defining communities. Exposure to various concepts of community and the role journalism has in defining these communities on both a local and global scale. Analyze a specific case study of one community journalism entity, and explore the ramifications of technology on the transformation of community.

JOUR 2501. History of American Media. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Explores the social and cultural history of journalism in the United States. Explore examples of journalism in various forms and critiques of journalism from time periods and study key moments in journalism history. Examines the practice of journalism, its core values, and how these have changed over time. Explores how technological, social and economic change shape journalism.

JOUR 3001. Local Journalism. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Skills-based that builds on JOUR 2001. Write publishable news stories based on field work and interviews. Emphasis on fully-developed, multi-source news stories that are fair and complete. Expand interview and research skills, and become familiar with the wide range of information available in public documents. pre-req: 2001

JOUR 3095. Special Topics: Journalism Inquiry (theory) (Titles to be assigned). (3 cr.; max 12 cr.; A-F or Audit; Every Fall & Spring)
Topics not included in regular curriculum. Courses will focus on theory and critical inquiry course relevant to the study of journalism and mass communication. New topics will be proposed through the required procedure but could include journalism in the digital media age, the impact of social media on journalism, citizen journalism, etc.

JOUR 3195. Special Topics: Journalism Craft (skills) (Titles to be Assigned). (3 cr.; max 12 cr.; A-F or Audit; Periodic Fall & Spring)
Topics not included in regular curriculum. Courses will focus on skills and craft courses relevant to the production of journalism and media content. New topics will be proposed through the required procedure but could include journalism advance digital storytelling, magazine writing, podcast production, etc.
JOUR 3401. Digital Storytelling. ( ; 4 cr. ; A-F or Audit; Periodic Fall & Spring)
Produce various forms of digital news stories drawing on photography, audio, video and other digital forms of storytelling. Learn the style differences between writing electronic news scripts and writing for print. Learn basic field recording techniques and production skills for audio and video. prereq: 2001

JOUR 3501. Audio stories for podcasts and radio. (3 cr. ; A-F or Audit; Periodic Fall & Spring)
This course teaches students how to record audio interviews and natural sound and assemble professional-quality audio stories. Students will learn how to use audio recording field gear and digital audio editing software. They will learn how to write for the ear. They will critique professional audio productions and produce their own multi-layer documentary-style audio production suitable for use on radio, podcasts, or in multimedia installations online or in real world settings. They will learn how podcasts and other audio productions fit into the current digital information landscape. prereq: JOUR 2001

JOUR 3555. Data Journalism. ( ; 3 cr. ; A-F or Audit; Every Spring)
Discover the stories hiding in the numbers. Learn the basic techniques of computer-assisted reporting, data practices laws, using government documents, business reports, and statistical methods. Introduces the basics in creating graphs, charts and other forms of data visualization. prereq: JOUR 2001

JOUR 3700. Media Law and Ethics. ( ; 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer)
Examines laws, regulations and major court decisions that affect journalists and news organizations. Topics include First Amendment principles of press freedom, libel, invasion of privacy, prior restraint, access to information, and the regulation of electronic media content. prereq: Writ 1120

JOUR 3991. Independent Study in Journalism. (1-5 cr. ; A-F or Audit; Every Fall, Spring & Summer)
Directed reading and research in journalism. prereq: 2001, instructor consent

JOUR 4001. Specialized Reporting: Narrative Nonfiction. ( ; 3 cr. ; A-F or Audit; Periodic Fall & Spring)
Survey of different styles of narrative nonfiction writing including science writing, food and agricultural journalism, travel writing and other specialized forms of journalism. Read and critique examples. Produce work in an area of specialization. prereq: 2001; no grad credit

JOUR 4021. Outdoor and Environmental Journalism. ( ; 3 cr. ; A-F or Audit; Periodic Spring)
Covers the basics of outdoor and environmental journalism as it pertains to newspapers, magazine, television and online. Read and critique examples and produce work in this genre. Pre-req: JOUR 2001

JOUR 4102. Newsroom Practicum. (3 cr. ; A-F or Audit; Periodic Fall & Spring)
Experience in a working newsroom. Apply skills from other journalism classes to plan, produce and manage an online news publication. Basic principles as well as practical skills with advanced computer programs. Includes editing, managing and reporting, as well as the discussion of both journalism and leadership issues. Advance theory and practice in news selection, preparation, and display for newspaper, magazine, broadcast and photojournalism media. Emphasis on the ethical and professional responsibility of the journalist. prereq: 2001; no grad credit

JOUR 4197. Journalism Internship. (1-3 cr. ; max 6 cr. ; S-N only; Every Fall, Spring & Summer)
Supervised professional experience as a working staff member with a newspaper, magazine, broadcast station or other communications organization. Emphasis on the ethical and professional responsibility of the journalist. prereq: 2001; no grad credit

JOUR 4200. Social Media in the Digital Age: From Pictographs to Pixels. ( ; 3 cr. ; A-F or Audit; Periodic Spring)
This course introduces students to social, political, historical, and economic aspects of social media in everyday life. Through both hands-on and analytical activities, students will explore and discover the evolution of social media and apply best practices to using and engaging with social media. Students will study new and use social media tools, such as Twitter, Instagram, Facebook, and Reddit to source, create, verify and share news and information. Understanding social media as both an innovation and a disruption, students will learn how emerging and evolving practices impact and shape their personal and professional identity.

JOUR 4500. Special Topics: (Various Titles to be Assigned). ( ; 3 cr. ; max 6 cr. ; A-F or Audit; Periodic Fall & Spring)
Selected themes and issues in journalism, such as staff organization, policies, finance, law, photography, design, and the role of the student press. prereq: 2001, 2101, no grad credit

JOUR 5102. Editing II: Newsroom Practicum. (3 cr. ; A-F or Audit; Periodic Fall & Spring)
Experience in a working newsroom. Apply skills from other journalism classes to plan, produce and manage an online news publication. Basic principles as well as practical skills with advanced computer programs. Includes editing, managing and reporting, as well as the discussion of both journalism and leadership issues. Advance theory and practice in news selection, preparation, and display for newspaper, magazine, broadcast and photojournalism media. Emphasis on the ethical and professional responsibility of the journalist. prereq: Grad Student; credit will not be granted if already received for 5102

JOUR 5197. Journalism Internship. (1-3 cr. ; S-N only; Every Fall, Spring & Summer)
Supervised professional experience as a working staff member with a newspaper, magazine, broadcast station or other communications organization. prereq: College Grad or grad student, instructor consent

Labovitz Schl of Business/Econ (LSBE)

LSBE 397. LSBE Internship. (0 cr. ; S-N only; Every Fall & Spring)
Work integrated learning program providing practical experience with students’ major. This course does not provide credits earned toward the degree, but offers academic recognition of the internship experience. Students participate in approved program within cooperating businesses, government agencies, or civic organizations. Required a minimum of 100 hours, with a 5 week minimum duration at the internship site, internship contract, and performance evaluation. Pre-req: LSBE Candidate, consent of Internship Director

LSBE 2000. Interpersonal and Teamwork Skills. (1 cr. ; A-F or Audit; Every Fall & Spring)
This course prepares students to work collaboratively and be effective as team members. Students will learn about team design and interpersonal dynamics effective interpersonal communication skills, team member roles, team goal setting, intercultural competence, and team conflict management. Students will also learn to work in diverse as well as virtual teams, pre-req: UST 1000 or completion of at least 15 credits

LSBE 3000. Career Development for the Business Professional. (1 cr. ; A-F or Audit; Every Fall & Spring)
This course focuses on preparing students for finding and succeeding in internships and for obtaining professional positions. Students will receive orientation regarding continuous learning and are socialized to understand how educational requirements contribute to their development as business professionals. Students will prepare resumes and cover letters, participate in mock interviews, and develop professional career development skills. Students will learn about career planning and implementation. pre-req: LSBE candidate

Language (LANG)

LANG 1101. Beginning Foreign Language I. (COMM & LAN; 4 cr. ; A-F or Audit; Every Fall, Spring & Summer)
For students studying beginning language where that language is spoken, under the auspices of another college or university or by individual arrangement with prior approval by the Department of Foreign Languages and Literatures; or students studying a less frequently taught language at UMD, prereq: instructor consent, department approval

LANG 1102. Beginning Foreign Language II. (COMM & LAN; 4 cr. ; A-F or Audit; Every Spring & Summer)
For students studying beginning language where that language is spoken, under the auspices of another college or university or by individual arrangement with prior approval...
by the Department of Foreign Languages and Literatures; or students studying a less frequently taught language at UMD. prereq: 1101 or instructor consent

**LANG 1201. Intermediate Foreign Language I.** (COMM & LAN; 4 cr.; Student Option; Every Fall, Spring & Summer)
For students studying intermediate language under the auspices of another college or university or by individual arrangement with prior approval by the Department of Foreign Languages and Literatures; or students studying a less frequently taught language at UMD. prereq: 1101 or instructor consent

**LANG 1202. Intermediate Foreign Language II.** (COMM & LAN; 4 cr.; A-F or Audit; Every Fall, Spring & Summer)
For students studying intermediate language under the auspices of another college or university or by individual arrangement with prior approval by the Department of Foreign Languages and Literatures; or students studying a less frequently taught language at UMD. prereq: 1201 or instructor consent

**LANG 2050. The Digital Humanities:** Language as Interface. (HUMANITIES; 4 cr.; A-F or Audit; Every Fall)
This course explores the use of digital technology in Humanities. To do so, we examine the impact digital technology has on the study of human culture in the language-centered disciplines. These disciplines, because they are often comparative, embrace the difficulties that come with translation and other forms of communication over distance. This course explores the status of language as interface in the increasingly complex media landscape still emerging today. By focusing on language as interface and by focusing on the intersection of Comparative Literacy Studies and the Digital Humanities, this course provides students with the skills they will need to best make use of digital technology as an instrument of the study of human culture.Taught in English.

**LANG 3093. Directed Study.** (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Directed Study prereq: instructor consent, department approval; maximum 6 credits between LANG 3091 and 3093

**LGBT 3000. Queer Theory.** (3 cr.; A-F or Audit; Every Fall)
This course introduces students to the fundamental and current issues in queer theory. Students in this course will learn how the field emerged from LGBTQ studies and feminist theory, as well as how theorists reclaimed the pejorative term ‘queer’ to describe marginalized ways of knowing and being. Students in this class will investigate key concepts in gay, lesbian, bisexual, transgender, queer, allied and intersex studies; performativity; critical theory; poststructuralism; and feminism. prereq: WS 1000 or CST 2001

**LGBT 3151. Queer Cinema in International Perspective.** (GLOBAL PER; 3 cr.; A-F or Audit; Spring Even Year)
This course offers an investigation of feature films and documentaries about lesbians, gays, bisexuals, transvestites, transgender and intersex individuals in international, primarily European and American, and historical perspective. pre-reg: WS 1000 or instructor consent

**LGBT 3152. History of the International Homosexual Rights Movement (1895 - present).** (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall)
This course introduces students to the long winding road toward the emancipation of sexual outsiders (homosexuals, lesbians, bisexuals, transvestites, intersex, and transgender individuals) worldwide. prereq: WS 1000 or CST 2001 or instructor consent

**LGBT 3153. Queer Media.** (CDIVERSITY; 3 cr.; A-F or Audit; Every Spring)
This course explores the varied terrain of new media - including digital, print, and broadcast platforms - from a queer perspective, that asks, "How queer is it?" Using theoretical and representational strategies from queer studies, media studies, feminist analysis, literary analysis, and cinema studies, along with foundational critiques of issues related to class, race, gender, and sexuality, this course investigates techniques for 'reading for the queer' in contemporary media. Because the course focuses on academic analysis, it does not require students (or texts) to maintain a queer identity or to claim membership in an LGBTQQ community. prereq: WS 1000 or CST 2001

**Limnology (LIM)**

**LIM 5010. Integrated Approaches to the Study of Inland Waters I.** (3 cr.; A-F or Audit; Every Fall)
An interdisciplinary introduction to the science of Limnology taught at the beginning graduate student level. The science of inland waters, Limnology, is built on Geology, Chemistry, Biology, and Physics and increasingly includes Social Sciences. Students will experience an in-depth, integrated approach to Limnology. Lake systems are emphasized but wetland and running water systems are discussed. The course includes significant out of class time reviewing on-line modules and other materials. In-class time is devoted mainly to group work, solving real-world problems, and student-led discussions and presentations. An optional companion laboratory and practice course (LIM 5013) is associated with this course where additional foundational and fundamental limnological techniques are taught. pre-reg: LIM 5010 or instructor consent

**LIM 5013. Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II.** (2 cr.; A-F or Audit; Every Spring)
A second semester of the graduate-level laboratory and discussion course with an interdisciplinary introduction to Limnology. This class will introduce students to laboratory, field, data collection, and data analysis techniques in the study of limnology. Introductory coding will be covered. Oral and written communication skills and problem solving skills will also be developed. The second half of this semester will be spent working with industry and non-profit community partners on a capstone project, emphasizing the use of newly acquired skills and knowledge in a non-academic setting. This course is designed to be taken in conjunction with LIM 5012, Limnology II. pre-reg: previous or concurrent LIM 5012 or instructor consent

**LIM 5011. Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters.** (2 cr.; A-F or Audit; Every Fall)
A graduate-level laboratory and discussion course with an interdisciplinary introduction to Limnology. This class will introduce students to laboratory, field, data collection, and data analysis techniques in the study of limnology. Introductory coding will be covered. Oral and written communication skills and problem solving skills will also be developed. This course is designed to be taken in conjunction with LIM 5010, Limnology I. pre-reg: pre or co-reg LIN 5010, grad student or instructor consent

**LIM 5012. Integrated Approaches to the Study of Inland Waters.** (3 cr.; A-F or Audit; Every Fall)
Continuing from LIM 5010, this is the second semester of an interdisciplinary introduction to the science of Limnology taught at the beginning graduate student level. The science of inland waters, Limnology, is built on Geology, Chemistry, Biology, and Physics and increasingly includes Social Sciences. Students will experience an in-depth, integrated approach to Limnology. Lake systems are emphasized but wetland and running water systems are discussed. The course includes significant out of class time reviewing on-line modules and other materials. In-class time is devoted mainly to group work, solving real-world problems, and student-led discussions and presentations. An optional companion laboratory and practice course (LIM 5013) is associated with this course where additional foundational and fundamental limnological techniques are taught. pre-reg: LIM 5010 or instructor consent

**LIM 5013. Laboratory and Discussion in Integrated Approaches to the Study of Inland Waters II.** (2 cr.; A-F or Audit; Every Spring)
A second semester of the graduate-level laboratory and discussion course with an interdisciplinary introduction to Limnology. This class will introduce students to laboratory, field, data collection, and data analysis techniques in the study of limnology. Introductory coding will be covered. Oral and written communication skills and problem solving skills will also be developed. The second half of this semester will be spent working with industry and non-profit community partners on a capstone project, emphasizing the use of newly acquired skills and knowledge in a non-academic setting. This course is designed to be taken in conjunction with LIM 5012, Limnology II. pre-reg: previous or concurrent LIM 5012 or instructor consent

**LIM 5010. Physical Limnology.** (3 cr.; A-F or Audit; Fall Odd Year)
Physical description of lake dynamics including: lake morphometry, water budget, light distribution, circulation, fronts, waves and mixing. Descriptive, mathematical, numerical and data-analysis techniques are used to investigate the various topics. prereq: Math 1297, Phys 2012 or 2015 and 2016, or grad student

**LIM 5012. Chemical Limnology.** (3 cr.; A-F or Audit; Fall Odd Year)
Organic and inorganic chemistry of natural waters, major and minor ions, pH-Eh relationships, carbon and nutrient cycles, pore water chemistry, sediment chemistry, microbial
LIM 5103. Geological Paleolimnology. (3 cr.; A-F or Audit; Fall Even Year)
Geological aspects of freshwater systems: origins, tectonic and climatic settings of lakes, geophysical mapping, physical sedimentary processes, sedimentary geochemistry, and geochronology. Particular focus on paleolimnology, the analysis of lake sediment to reconstruct past climate and environment. Prereq: MATH 1290 or 1296, or PHYS 1002 or 2015 or 2018, or CHEM 1155 or 1175 or grad student.

LIM 5104. Geochemical, Physical, and Biological processes in Aquatic Sediments. (2 cr.; A-F or Audit; Spring Even Year)
The course covers the geochemical, physical, biogeochemical, and biological processes in the upper meters of aquatic sediments. Topics include biogeochemical cycles of C, N, P, S; sediment-water exchanges of nutrients, metals, and pollutants; pathways and rates of microbially catalyzed reactions; bioturbation and bioirrigation; measurement technique and reaction-transport modeling. Prereq: Graduate student or instructor permission.

LIM 5105. Research Frontiers and New Directions in Limnology and Environmental Science. (1 cr.; S-N or Audit; Periodic Spring)
An interdisciplinary graduate seminar with dual goal of reviewing most significant current developments in limnological science and helping students identify most significant knowledge gaps in their discipline’s research fields. The course involves guest lectures, student presentations and discussions. It aims to provide students with guidance on choosing research directions to achieve an optimal balance between difficulty and scientific payoff. Prereq: Graduate student or instructor permission.

Linguistics (LING)

LING 1811. Introduction to Linguistics. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Provides an introduction to a theoretical study of the nature of natural language, using examples primarily from present-day English. Students are expected to learn analytical skills to understand how human languages (and the human mind) work and how the sub-components (sounds, words, sentences and meaning) of natural languages are systematically organized.

LING 2101. Phonetics and Phonology. (NAT SCI; 3 cr.; A-F or Audit; Every Fall)
This course, which is rooted in biology and physics, focuses on the sound systems of the languages of the world. What do these systems have in common? How do they differ from one another? There is an immense amount of variation across languages, but it is far from random, and this assumption is the driving factor of the course. Students will learn the anatomy of the vocal tract and the means of speech articulation, and they will learn to produce every possible sound of every possible human language. They will also analyze the acoustic signals resulting from speech articulation and how these acoustic results are perceived by hearers. Along the way, student learn to analyze large amounts of phonetic data, both by hand and electronically and to understand when a difference in speech sounds can change the meaning of a message as opposed to simply changing as a result of contextual effects. In short, when are speech sounds meaningful, and what does this tell us about the way the human language faculty is organized? The scientific approach taken here will teach students a great deal about their own language. It will also teach students a great deal about the diversity of languages in the world: how they differ, but more importantly, what they all have in common, and what it is that makes them all human.

LING 2195. Special Topics: (Various Titles to be Assigned). (3 cr. [max 6 cr.]; A-F or Audit; Periodic Spring)
This course is about the connections between human language and the human experience; how language shapes our perception, our media, and the way we live.

LING 2400. Language of Advertising. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Our linguistic landscape has never been more saturated with advertising, branding, messaging, and media. This course will explore the links between the markets and masses through a variety of linguistic aspects. Students will scrutinize film, journalism, podcasts, comics, and interactive experiences fr language play, genderspeak, teenspeak, emerging changes in use, and representation of time and perspective.

LING 2506. Language and Writing. (3 cr.; A-F or Audit; Every Spring)
Different from a traditional linguistic approach, language and its system will be examined with emphasis on writing, as opposed to speech. Based on the formal theoretical foundations of language and linguistics, three main topics are discussed in detail. First, the world’s major writing systems and a short history of writing are introduced. Second, the English sentence structures are studied from a contemporary theoretical and historical linguistic perspective. Third, language use in writing is discussed in various genres. Prereq: WRIT 1120

LING 2600. Language in Society. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course considers the way social factors relate to the form and function of language. We will consider a broad range of topics, such as language and gender, in-group slang, bilingualism, pidgins and creoles, African American Language, and more as time permits. An important part of the course will consider the role of language in constructing and maintaining group identity, and we will look specifically at language variation in Minnesota and other regions of the United States.

LING 3101. Introduction to Phonology. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Phonology is a grammar of sound for a language. The phonological component of a language is the system of rules, representations and principles that govern the patterning of sounds. To understand the general patterns of sounds, students are expected to analyze data across the language families pre-theoretically. This pre-theoretical analysis will be scientifically explained within modern phonological theories. Prereq: 1811 or instructor consent.

LING 3102. Syntax. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Deals with how sentences are structured. After discussing lexical categories (parts of speech) and phrasal structures from a scientific perspective, several different theories are introduced under the blanket name Generative Grammar. Based on Generative Grammar, students learn how to analyze English sentence structures to understand universal properties of natural language. Prereq: 1811 or instructor consent.

LING 3103. Semantics and Pragmatics. (3 cr.; A-F or Audit; Every Fall)
This course will provide an introduction to the study of what is said (semantics) and what is meant (pragmatics) in natural language. It will provide an introduction to set theory, first- and higher- order logic, and lexical semantics. It will also cover pragmatic topics such as presupposition, implicature, and speech act theory. Beyond these basic topics, the course will focus on specific sub-topics from time to time such as negation, reference, information structure, reported speech, genre, and so on. Prereq: 1811

LING 3201. Language and Gender. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course is concerned with relations between gender and language structure, use, and change. Taking data from English and many other languages, the course will address questions such as: Do women and men use language differently? Do they use different language? If so, why and what are the differences? What can this tell us about underlying cultures? Is there such a thing as Gay speech? When is gendered language acquired by children? How do these questions play out across a range of situations and institutions, including the criminal justice system medical fields, business environment, and so on, as well as across cultures? We will also be concerned with the nature of language change over time, and the roles gender plays in this area as well. The course will be primarily lecture and discussion, and students will gain experience gathering and analyzing data across a range of situations and media. Prereq: Preferred LING 1811 or LING 2600

LING 3203. Linguistics and Social Media. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
This course examines the structure and use of language across a wide range of social media platforms, such as texting, Facebook, e-mail, Instagram, Snapchat, Twitter, blogs and more. Rooted in theories of discourse analysis, sociolinguistics, and pragmatics,
this course looks at how structural limitations steer the functions of the various media at the same time as engendering creativity among users. Similarly, the course investigates the ways in which online communities construct and maintain identities through language use, and in so doing, sheds light on the linguistic behavior of traditional community groups as well. Students will gain experience collecting large amounts of electronic data and performing quantitative analyses on it as well as performing ethnographic descriptions of online communities. Students will also examine the way interpersonal relationship develop and are maintained through the linguistic conventions of the various media. The class will consist of lecture, discussion groups, and a significant amount of hands-on experience in an extended final project. pre-req; LING 1811 or LING 2600 or instructor consent

LING 3591. Independent Study in Linguistics. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed reading and/or research. prereq: 1811 or instructor consent, department consent

LING 4103. Morphology: Word Structures and Rules. (3 cr.; A-F or Audit; Fall Odd Year) An introductory survey course on linguistic morphology that examines key concepts used to describe and explain the internal structures of words, and also deals with the central word formation processes across the typologically different languages. This theoretical knowledge acquired is then applied to the analysis of word formation in various discourse domains in present-day English and non-Indo-European languages. prereq: 1811, no grad credit

LING 4104. Corpus Linguistics. (3 cr.; A-F only; Periodic Spring) The aim of this course is to learn how to analyze linguistic phenomena based on data extracted from large databases. Students will learn the distinction between corpus methods and the traditional, intuitive-based approaches. After reviewing key linguistic concepts learned in the prerequisite linguistics course, students will learn several statistical tests widely used in linguistics and how these tests are applied to the data extracted from large corpora. Students will also acquire basic computer programming skills in Python and R to clean up and manipulate the data structure for the purpose of linguistic exploration. Students will be able to evaluate competing hypotheses using the results of their empirical investigations. pre-req: LING 1811

LING 4105. Cognitive Linguistics. (3 cr.; A-F or Audit; Periodic Fall) As a general introduction to theoretical linguistics - specifically the framework of cognitive linguistics - this course consists of three main parts that provide an overview of some of the main aims, assumptions, and commitments of cognitive linguistics enterprise, and provides an indicative sketch of some of the descriptive analyses and theoretical positions that are representative of cognitive linguistics. Based on this theoretical background, the next two parts focus on the two best-developed research frameworks in cognitive linguistics: cognitive semantics (meaning), and the cognitive approach to grammar (structure). Students will also learn the difference between cognitive approaches to linguistics and the mainstream generative approach. pre-req: LING 1811; no grad credit

LING 4195. Special Topics: (Various Titles to be Assigned). (; 1-4 cr.; A-F or Audit; Periodic Spring) Subdisciplines such as pragmatics, semantics, regional and social language variation, childhood language acquisition, second language learning, language change and linguistic reconstructions, cognitive linguistics, and history of linguistic inquiry. prereq: Minimum 60 credits, no grad credit

LING 4852. Teaching Assistantship in Linguistics. (1-3 cr.; A-F or Audit; Every Fall, Spring & Summer) Students gain practical experience in teaching-related activities for introductory linguistic courses. Students assist the instructor in administration of the class. prereq: 1811, 3101, 3102, instructor consent, no grad credit

LING 5103. Morphology: Word Structures and Rules. (; 3 cr.; A-F or Audit; Fall Odd Year) An introductory survey course on linguistic morphology that examines key concepts used to describe and explain the internal structures of words, and also deals with the central word formation processes across the typologically different languages. This theoretical knowledge acquired is then applied to the analysis of word formation in various discourse domains in present-day English and non-Indo-European languages. prereq: 1811, Grad students

LING 5852. Practicum in Teaching Linguistics. (3 cr.; A-F or Audit; Every Fall & Spring) Supervised teaching in introductory linguistics courses. Experience in preparation for and in conduct of classes, in consultations with students, and in testing. prereq: College Grad or Grad student

LING 8591. Independent Study in Linguistics. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed reading and/or research. prereq: department approval
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

**FMIS 4221**

Intermediate courses that focuses on the business and technology that they acquired through their junior and senior year courses to real-world projects. The goal of this course is to augment the knowledge with the state-of-the-art technology in the field of information systems for the conventional and mobile platforms, while at the same time getting students involved in projects to expose them to an in-depth practical experience. Topics include: software version control; computing platform ecosystem; project management; best practices and technologies in business applications development; and business computing, including simulation and data analysis.

**MIS 4225. Advanced Applications Development.** (3 cr.; A-F only; Every Fall & Spring)

This course is designed to give students opportunities to apply the knowledge of business and technology that they acquired through their junior and senior year courses to real-world projects. The goal of this course is to augment the knowledge with the state-of-the-art technology in the field of information systems for the conventional and mobile platforms, while at the same time getting students involved in projects to expose them to an in-depth practical experience. Topics include: software version control; computing platform ecosystem; project management; best practices and technologies in business applications development; and business computing, including simulation and data analysis.

**MIS 4223. Systems Analysis and Design.** (3 cr.; A-F or Audit; Every Fall & Spring)

Analysis phase of systems development life cycle. Emphasizes feasibility study, requirements analysis, and system specification. Detailed study of current physical and logical systems models and specification. Prereq: FMIS 2201 or MIS 2201, LSBE candidate or non-LSBE MIS minor or college consent; credit will not be granted if already received for FMIS 3222 or FMIS 4223, no grad credit.
assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the ? major curriculum, ? students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed prereq; LSBE candidate, prior major coursework and consent of internship director

MGTS 3801. Human Resource Management. ( ; 3 cr. ; A-F only; Every Fall & Spring) Introduction to theory and practice of human resource management in private and public organizations. Organizational, legal, and ethical influences on major personnel functions, including planning, staffing, training, performance appraisal, compensation, and labor-management relations. prereq; LSBE candidate or approved non-LSBE business administration or approved non-LSBE HRM minors or college consent

MGTS 3897. Human Resources Internship. (1-6 cr. ; A-F only; Every Fall, Spring & Summer) Work-integrated learning program providing practical experiences within students? major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course; 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the ? major curriculum, ? students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed prereq; LSBE candidate, prior major coursework, consent of Internship Director

MGTS 3997. Management of Community Projects. (1-3 cr. ; A-F only; Every Fall, Spring & Summer) Requires design and administration of community-related project involving volunteers. Interns identify project, contact appropriate persons, obtain approval, and submit written proposal. Requires completion of minimum of 100-300 hours, maintenance of weekly journal, oral presentation, and written analysis. prereq; 3401, 3801, LSBE candidate, instructor consent

MGTS 4095. Entrepreneurship Special Topics: (various Titles to be Assigned). ( ; 1-3 cr. [max 6 cr.]; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the instructional faculty, to explore one or more entrepreneurial management issues in substantial depth. prereq; LSBE candidate, 3401 or college consent; no grad credit

MGTS 4195. Micro Special Topics: (Various Titles to be Assigned). ( ; 1-3 cr. [max 6 cr.]; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the instructional faculty, to explore one or more micro management issues in substantial depth. prereq; LSBE candidate, 3401 or college consent; maximum of 6 credits between MGTS 4195 and MGTS 4495 Micro Topics

MGTS 4295. Special Macro Topics: (Various Titles to be Assigned). ( ; 1-3 cr. [max 6 cr.]; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the instructional faculty, to explore one or more contemporary macro management issues in substantial depth. prereq; LSBE candidate, 3401 or college consent; maximum of 6 credits between MGTS 4295 and MGTS 4495 Macro Topics

MGTS 4395. Process Special Topics: (Various Titles to be Assigned). ( ; 1-3 cr. [max 6 cr.]; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the instructional faculty, to explore one or more contemporary process management issues in substantial depth. prereq; LSBE candidate, 3401 or college consent; maximum of 6 credits between MGTS 4395 and MGTS 4495 Process Topics

MGTS 4411. High Performance Organization Design and Transformation. (3 cr. ; A-F only; Periodic Fall & Spring) The course introduces knowledge and develops skills on how to design and change organizational systems to achieve optimal performance. Students are expose to modern and classic organizational theories on how to maximize efficiency and innovation. Building upon the knowledge, students will diagnose organizational systems to identify areas of improvement and subsequently plan and orchestrate a change process to transform organizations for high performance. prereq; 3401, LSBE candidate or college consent

MGTS 4421. Managing Change. (3 cr. ; A-F only; Periodic Fall & Spring) Causes, goals, processes, and results of organizational change and employee responses to it. Assumptions, values, contingency factors, ethical considerations, models, and intervention strategies for organizational development. Role of managers as change agents. prereq; 3401, LSBE candidate or approved non-LSBE Organizational Management minor or grad student or college consent

MGTS 4431. Leadership Studies. ( ; 3 cr. ; A-F only; Every Fall) A survey of the leadership literature aimed at the development of an understanding of leaders and leadership process. An exploration of such questions as: Who is the person the leader? How do people come to the position of a leader? What is the nature of leadership as a process? How do leaders influence others? What is participative leadership? What is charismatic and transformational leadership? prereq; 3401, LSBE candidate or Non-LSBE Organizational Management minor or college consent

MGTS 4441. Developing Managerial Skills. (3 cr. ; A-F or Audit; Every Fall) This course focuses on skills required by managers in today's workforce to be effective leaders. Example of broad topics covered in the course include interpersonal skills and problem-solving skills. Students will develop these skills through active-learning. prereq; 3401; no grad credit

MGTS 4443. Teams in Organizations. (3 cr. ; A-F only; Periodic Fall & Spring) Examines effective design and management of a variety of groups in organizations, including work groups, task forces, self-managed teams and coalitions. Covers group composition, goals, processes, and effectiveness; includes leadership, managing external relationships, and performance measurement. prereq; LSBE candidate, 3401 or instructor consent

MGTS 4451. Management Inquiry. (3 cr. ; A-F only; Every Spring) Methods employed by organizational specialists in conducting applied inquiry (research) to assist organizational decision making, coupled with an examination of a contemporary management issue. Preparation and written/oral presentation of research findings from student-conducted field, laboratory, or library research projects focused on contemporary management issues. prereq; 3401, 3801, approved LSBE candidate or approved non-LSBE Organizational Management minor or college consent

MGTS 4461. Business Ethics. (3 cr. ; A-F only; Every Fall) Stakeholder theory, ethical decision-making frameworks, ethical business and function-specific issues (e.g., organizational management, human resource management), with business as part of larger system (e.g., economic, political, social, emphasis on external environment--economics, culture, government, technology). prereq; 3401, 3801, LSBE candidate or approved non-LSBE Organizational Management minor or college consent

MGTS 4463. Sustainability and Sustainable Management. (3 cr. ; A-F or Audit; Every Spring) This course will introduce students to the concepts of sustainability in a managerial context. prereq; 3401 and LSBE candidate or approved non-LSBE Organizational Management Minor or instructor consent; no grad credit

MGTS 4472. Entrepreneurship. (3 cr. ; A-F only; Every Fall) Seminar on the fundamentals of entrepreneurship, the characteristics of entrepreneurs, and the life cycle of a new venture: creating and starting a new venture; financing the new venture; managing, growing, and ending the new venture. prereq; LSBE candidate or approved non-LSBE Organizational Management Minor or college consent

MGTS 4473. Management of Innovation and Technology. ( ; 3 cr. ; A-F only; Periodic Fall) Issues related to achieving maximum leverage from innovation competencies, skills, and resources. Factors distinguishing

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
high-innovation companies, strategies for innovation, internal and external conditions, and market consequences of innovation. Integration of technology within the strategic management process. prereq: 3401, LSBE candidate or college consent

MGTS 4474. International Management. (3 cr.; A-F only; Periodic Fall & Spring) Differences in culture, history, resources, etc. are explored from the context of managing global businesses and workforce. Students will reflect on their own managerial skills, and develop skills to become a global manager. prereq: 3401, LSBE candidate or college consent

MGTS 4475. Negotiations, Bargaining and Conflict Resolution. (3 cr.; A-F only; Periodic Fall & Spring) Combines analytical material on the negotiation process, with a series of negotiating experiences, to develop your understanding of, and skills in, negotiating and resolving conflicts in business. Covers topics and strategies appropriate for use between people, departments, organizations and countries, across a variety of industries. prereq: LSBE candidate, 3401 or instructor consent

MGTS 4478. Supply Chain Management. (3 cr.; A-F or Audit; Every Fall) Key drivers of supply chain performance will be explored in this course along with how these drivers may be used to improve performance on a practical level during supply chain design, planning, and operations. Students will gain a solid understanding of the analytical tools necessary to solve supply chain problems. prereq: LSBE student: MGTS 3301 or non-LSBE student: instructor consent; no grad credit

MGTS 4481. Strategic Management. (3 cr.; A-F only; Every Fall & Spring) Integration of basic functions of marketing, finance, production, and behavioral sciences. Emphasis on organizational environments and development and implementation of competitive strategies that respond to social, political, and economic conditions from the perspective of top management. prereq: 3401, 3801, Mktg 3701, FMIS 3301 or MGTS 3301, FMIS 3601, 90 credits, LSBE candidate or college consent; no grad credit

MGTS 4495. Special Topics: (Various Titles to be Assigned). (1-3 cr; max 9 cr.; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the institutional faculty, to explore one or more contemporary organization management issues in substantial depth.

MGTS 4821. Staffing Work Organizations. (3 cr.; A-F only; Every Spring) Theory and practice of staffing work organizations. Emphasis on design and implementation of staffing systems, legal requirements, and career planning. prereq: 3801, LSBE cand or department consent

MGTS 4831. Compensation Systems. (3 cr.; A-F only; Every Fall) Theory, design, and practice of employee compensation systems. Impacts of compensation, economic and institutional

forces influencing employer compensation policies and practices, supplemental forms of compensation and administrative practices. prereq: 3801, LSBE candidate or college consent

MGTS 4841. Training and Development. (3 cr.; A-F only; Every Spring) Elements of training and development program planning and delivery: learning theories and approaches, needs assessment, training objectives, design, training methods, transfer-of-training strategies, and evaluation. Assess, design, and evaluate human resource development systems. Develop training skills and techniques. prereq: 3801, LSBE candidate or approved non-LSBE Human Resources Management minor or college consent

MGTS 4851. Labor Relations. (3 cr.; A-F only; Periodic Spring) Nature of and basis for the labor relations system in the United States. Emphasis on background of labor movement, union organizing, bargaining relationships, labor law; important issues for business, policy makers, and labor unions (e.g. workplace flexibility, employee empowerment, labor-management partnerships, and globalization); and options for labor relations reform. prereq: 3801, LSBE candidate or college consent

MGTS 4861. International Human Resource Management. (3 cr.; A-F only; Every Fall) Course combines theories of culture with HRM applications to develop students' awareness of cultural issues as they apply in the workplace. prereq: 3801, LSBE candidate or instructor consent

MGTS 4871. Strategic Human Resource Management. (3 cr.; A-F or Audit; Every Fall) This course aims to provide students with a systematic understanding of HRM from a strategic lens. Students in this course will study key human resource functions with a special focus on how each function complements each other and at the same time contributes to an organization's overall business strategy. Students will develop their ability to analyze, evaluate, and design effective human resource management system, which are critical skills not only for human resource managers but also general managers as well. pre-req: MGTS 3801

MGTS 4881. Human Resource Issues and Trends. (3 cr.; A-F only; Periodic Fall & Spring) Integrative, problem-solving approaches to contemporary human resource challenges, with emphasis on employment law. prereq: 3801, LSBE candidate or college consent

MGTS 4895. Special Topics: (Various Titles to be Assigned). (1-3 cr; max 9 cr.; A-F only; Periodic Fall, Spring & Summer) Enables students, working closely with the instructional faculty, to explore one or more contemporary human resource management issues in substantial depth. prereq: LSBE cand or instructor consent

MGTS 4921. Entrepreneurial Finance. (3 cr.; A-F or Audit; Every Spring) Course topics include raising seed and growth capital from venture capital, business angels, investment banking, commercial banking, and bootstrapping sources, and understanding financial problems unique to the small and medium sized firms undergoing rapid growth. The course examines proposals made to venture capital firms, particularly in terms of their financial viability as well as financial management for entrepreneurs over the life of business project. Includes financing start-ups, financial planning for the nonpublic smaller enterprise, going public, selling out, bankruptcy, sources of capital, and other related topics. prereq: LSBE candidate, FMIS 3601; no grad credit

MGTS 4931. Family Business Management. (3 cr.; A-F or Audit; Every Spring & Summer) Family Business Management provides an introduction to understanding family owned, controlled, and influenced businesses. Family Businesses are the most prevalent form of business organization all over the world. The course introduces the unique issues that arise due to the interaction of the family system with the business system. Issues such as governance, entrepreneurship, succession, growth, internationalization, strategy, and leadership are discussed in the context of family business management. The influence of family on the business values, goals, behavior, and performance is described. Finally, the management of non-family employees in family businesses is covered. prereq: 3401 or 3801, 4472, LSBE candidate or college consent; no grad credit

MGTS 4941. Social Entrepreneurship. (3 cr.; A-F or Audit; Every Spring) This course introduces students to the field of social entrepreneurship, the practice of identifying, designing, starting and growing successful mission-driven for profit and nonprofit ventures. These include non-profit enterprises designed to respond to a special social, need, as well as more traditional ventures working to incorporate socially-responsible practices into their business models. The course provides an overview of the processes, challenges, and demands associated with creating ventures that seek to integrate financial and social/environmental benchmarks of success. This course is designed to appeal to those who want to learn more about enterprise in business and social contexts. prereq: LSBE candidate or college consent, no grad credit

MGTS 4951. Environmental Entrepreneurship. (3 cr.; A-F or Audit; Every Fall) This course introduces students to the field of environmental entrepreneurship. Students will have the opportunity to learn about the screening and surveillance approach to the market, using the available resources, realizing ideas that are based on solving an environmental problem, and how to introduce successful solutions that will create financial turnover and influence market structures and even creative destruction leading to a more sustainable future. The course
an overview of the processes, challenges, and demands associated with creating ventures that seek to integrate financial and environmental benchmarks of success. Additionally, the course introduces students to potential opportunities for environmentally related products, services, and markets. This course is designed to appeal to those who want to learn more about enterprise in business and environmental contexts. pre-req: 4472, LSBE candidate or college consent; no grad credit

MGTS 4961. Entrepreneurial Capstone Experience. (3 cr.; A-F or Audit; Every Spring & Summer)
Entrepreneurial Experience course gives our undergraduate students the unique opportunity of conceiving, launching, and operating a real business as part of their educational experience. Student put entrepreneurial thought and action into practice by developing, taking and building on key action steps to advance their own venture or on projects for existing enterprises. Key elements of the process involve both primary and secondary research while engaging prospective customers, experts, suppliers, stakeholders, and investors. Students are challenged to test ideas and gain a clearer understanding of the interdisciplinary complexities involved within the entrepreneurial landscape. The core is action based learning which will result in pivoting your venture based on information gained in experimenting and testing assumptions. pre-req: 4472, BLAW 3201, MKTG 4741, LSBE candidate, instructor consent; no grad credit

MGTS 4997. Entrepreneurial Internship. (1-6 cr.; A-F or Audit; Every Spring)
Work-integrated learning program providing practical experiences within students? major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course; 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits= 200 hour minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the ? major curriculum, ? students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed pre-req; LSBE candidate, major coursework and consent of internship director; no grad credit

MGTS 5431. Leadership Studies. (3 cr.; A-F or Audit; Every Fall)
A survey of the leadership literature aimed at the development of an understanding of leaders and the leadership process. An exploration of such questions as: Who as a person is the leader? How do people come to the position of a leader? What is the nature of leadership as a process? How do leaders influence others? What is participative leadership? What is charismatic and transformational leadership? pre-req: MBA student or instructor consent

MGTS 5463. Sustainability and Sustainable Management. (3 cr.; A-F or Audit; Every Spring)
This course will introduce students to the concepts of sustainability in a managerial context. pre-req: MBA student or instructor consent

MGTS 5472. Entrepreneurship. (3 cr.; A-F or Audit; Every Fall)
Seminar on the fundamentals of entrepreneurship, the characteristics of entrepreneurs, and the life cycle of a new venture: creating and starting a new venture; financing the new venture; managing, growing, and ending the new venture. pre-req: MBA student or instructor consent

MGTS 5473. Management of Innovation and Technology. (3 cr.; A-F or Audit; Periodic Fall)
Issues related to achieving maximum leverage from innovation competencies, skills, and resources. Factors distinguishing high-innovation companies, strategies for innovation, internal and external conditions, and market consequences of innovation. Integration of technology within the strategic management process. pre-req: MBA student or instructor consent

MGTS 5473. Management of Innovation and Technology. (3 cr.; A-F or Audit; Periodic Fall)
Issues related to achieving maximum leverage from innovation competencies, skills, and resources. Factors distinguishing high-innovation companies, strategies for innovation, internal and external conditions, and market consequences of innovation. Integration of technology within the strategic management process. pre-req: MBA student or instructor consent

MGTS 5478. Supply Chain Management. (3 cr.; A-F or Audit; Every Fall)
Key drivers of supply chain performance will be explored in this course along with how these drivers may be used to improve performance on a practical level during supply chain design, planning, and operations. Students will gain a solid understanding of the analytical tools necessary to solve supply chain problems. pre-req: MBA student or instructor consent

MGTS 5821. Staffing Work Organizations. (3 cr.; A-F or Audit; Every Spring)
Theory and practice of staffing work organizations. Emphasis on design and implementation of staffing systems, legal requirements, and career planning. pre-req: MBA student or instructor consent

MGTS 5831. Compensation Systems. (3 cr.; A-F or Audit; Every Fall)
Theory, design, and practice of employee compensation systems. Impacts of compensation, economic and institutional forces influencing employer compensation policies and practices, supplemental forms of compensation and administrative practices. pre-req: MBA student or instructor consent

MGTS 5851. Labor Relations. (3 cr.; A-F or Audit; Periodic Spring)
Nature of and basis for the labor relations system in the United States. Emphasis on background of labor movement, union organizing, bargaining relationships, labor law; important issues for business, LSBE policy makers, and labor unions (e.g. workplace flexibility, employee empowerment, labor-management partnerships, and globalization); and options for labor relations reform. pre-req: MBA student or instructor consent

MGTS 5861. International Human Resource Management. (3 cr.; A-F or Audit; Every Fall)
Course combines theories of culture with HRM applications to develop students? awareness of cultural issues as they apply in the workplace. pre-req: MBA student or instructor consent

MGTS 5921. Entrepreneurial Finance. (3 cr.; A-F or Audit; Every Spring)
Course topics include raising seed and growth capital from venture capital, business angels, investment banking, commercial banking, and bootstrapping sources, and understanding financial problems unique to the small and medium sized firms undergoing rapid growth. The course examines proposals made to venture capital firms, particularly in terms of their financial viability as well as financial management for entrepreneurs over the life of business project. Includes financing start-ups, financial planning for the nonprofit smaller enterprise, going public, selling out, bankruptcy, sources of capital, and other related topics. pre-req: MBA student or instructor consent

Marketing (MKTG)

MKTG 3701. Principles of Marketing. (3 cr.; A-F only; Every Fall & Spring)
Marketing as a process of exchange management. Emphasis on conceptual tools necessary to deal with both strategic marketing management issues and tactical management of product, price, promotion, and distribution. pre-req: MBA student or instructor consent

MKTG 3710. Green Marketing. (3 cr.; A-F or Audit; Every Fall & Spring)
This course provides an overview of the role of green marketing and sustainability in marketing strategy. The course adopts the triple bottom line perspective to case sustainability as the simultaneous pursuit of financial, social/relational, and environmental performance. It provides an assessment of current efforts to pursue sustainability with a primary focus on the interaction of the marketing organization with the environment. The course focuses on examining specific marketing tactics employed by firms seeking to maximize triple bottom line performance, and subsequently address consumption processes in the household, industrial, services, and transportation sectors of the economy. pre-req: 3701

MKTG 3711. Marketing Research. (3 cr.; A-F only; Every Fall & Spring)
Emphasis on improving skills of conducting secondary research, designing a primary
research study, and analyzing and reporting results of a research study. prereq: MgtS 3701 or Mktg 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing subplan major or non-LSBE Marketing Minor or college consent

**MKTG 3721. Social Media Marketing.** (3 cr.; A-F or Audit; Every Fall)
This course provides an overview of various aspects of social media marketing, including: (1) the social media planning process (2) how social media marketing platforms are coordinated with other traditional promotional elements (advertising, public relations, consumer promotion, customer service, personal selling) as a part of an integrated marketing communications campaign. prereq: 3701, LSBE Candidate or Graphic Design with Marketing subplan or college consent

**MKTG 3731. Sales Analytics: An Introduction to Sales Analysis Techniques and Applications.** (3 cr.; A-F or Audit; Every Spring)
Sales Analytics introduces students to the foundation metrics used in Business to Business and Business to Consumer environments. Students use excel to manage and summarize data sets, analyze product category and brand trends, and assess the impacts of various trade promotions. Students develop business insights from the data sets and use these insights to build compelling sales presentations. The course focuses on the use of data sets typical to consumer packaged goods industries but will also integrate data from other sources including: the US Census, other government surveys and Experian Simmons Oneview. pre-req: MKTG 3701

**MKTG 3741. Fundamentals of Selling.** (3 cr.; A-F only; Every Fall & Spring)
Theory and practice of personal selling as used by organizations to develop long-term partnerships with customers. Emphasis on marketing, planning, communication, and presentation skills. prereq: MgtS 3701 or Mktg 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or non-LSBE Marketing Minor or college consent

**MKTG 3751. Marketing Ethics.** (3 cr.; A-F or Audit; Every Summer)
Introduces a broad range of ethical issues encountered by marketing practitioners, and helps discover, develop, and test personal sets of guidelines for making judgments when such issues arise. prereq: 3701, LSBE candidate or Graphic Design and Marketing majors or college consent

**MKTG 3761. Marketing Analytic I: Introduction to Marketing Metrics and Fundamental Analytic Techniques.** (3 cr.; A-F or Audit; Every Spring)
This course introduces students to marketing metrics and develops core quantitative skills necessary to convert large amounts of data into actionable information for businesses. The course builds knowledge and understanding of the essential marketing metrics as well as the statistical techniques necessary for students to be able to competently summarize data, appropriately classify data and use data to make predictions. Emphasis is placed on the application of skills and techniques to data sets and using the analysis to answer business questions and formulate recommendations. prereq: Marketing Analytics Major

**MKTG 3771. Sports Marketing.** (3 cr.; A-F or Audit; Periodic Fall & Spring)
This course will introduce students to the foundational metrics used in Business to Sports Marketing. Emphasis on developing and marketing new products, pragmatic perspectives. Students requiring graduate credit must complete additional coursework. prereq: MgtS 3701 or Mktg 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or non-LSBE Marketing Minor or college consent

**MKTG 3771. Marketing Internship.** (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Work-integrated learning program providing practical experiences within students' major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course: 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits = 200 hours minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the major curriculum, students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Pre-req: LSBE candidate, prior major coursework, consent of internship director; credit will not be granted if already received for Mktg 3797

**MKTG 3771. Marketing Analytics Summer Internship.** (1-6 cr.; A-F or Audit; Every Summer)
The Marketing Analytics Summer Internship provides students with an opportunity to work as a member of a marketing analytics team for a minimum of 100 hours during the summer. During the internship, students have the opportunity to apply their analytic knowledge and skills in a chosen business or industry sector. In order to help you determine your internship course credit value, the number of work experience hours required per credit are as follows: 0 ? 1 credits 100 hours minimum; 2 credits 150 hours minimum; 3 credits 200 hours minimum; 4 credits 250 hours minimum; 5 credits 300 hours minimum; 6 credits 350 hours minimum. prereq: LSBE candidate, completion of at least two courses in the major and consent of internship director

**MKTG 3771. Independent Study.** (1-3 cr.; A-F only; Every Fall, Spring & Summer)
For students wishing to do special work in marketing that extends beyond, or in greater depth than, regular course offerings. prereq: department consent

**MKTG 3771. Marketing Analytics Summer Internship.** (1-6 cr.; A-F or Audit; Periodic Fall & Spring)
Work-integrated learning program providing practical experiences within students' major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course: 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits = 200 hours minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the major curriculum, students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Pre-req: LSBE candidate, prior major coursework, consent of internship director; credit will not be granted if already received for Mktg 3797

**MKTG 3771. Marketing Internship.** (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer)
Work-integrated learning program providing practical experiences within students' major. Students participate in approved program within cooperating business, governmental agencies, or civic organizations. There are minimum hours based upon the credits you select for the course: 1 credit = 100 hour minimum; 2 credits = 150 hours minimum; 3 credits = 200 hours minimum. The course also requires completion of internship contract, assignments, and performance evaluations. For LSBE majors that allow for only three (or fewer) credit hours of internship in the major curriculum, students will be allowed to count the remaining internship credits in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Pre-req: LSBE candidate, prior major coursework, consent of internship director; credit will not be granted if already received for Mktg 3797

**MKTG 3791. Advertising and Marketing Communications.** (3 cr.; A-F only; Periodic Fall & Spring)
Promotional planning. Emphasis on planning for advertising, sales promotion, public relations/publicity, direct marketing, and personal selling. Importance of integrated marketing communications to organizations. prereq: MgtS 3701 or Mktg 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan or non-LSBE Marketing Minor or college consent

**MKTG 3791. Consumer Behavior.** (3 cr.; A-F only; Every Fall & Spring)
Buyer behavior and implications for marketing strategy. Emphasis on information processing concepts, influences on behavior, and decision-making processes from both conceptual and pragmatic perspectives. Students requiring graduate credit must complete additional coursework. prereq: MgtS 3701 or Mktg 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or non-LSBE Marketing Minor or college consent

**MKTG 3791. Developing and Marketing New Products.** (3 cr.; A-F only; Periodic Fall & Spring)
A marketing-oriented new products management course that explores the new product development process with a focus on marketing strategies for the planning, development and launch of new products and services. prereq: MGTS 3701 or MKTG 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or non-LSBE Marketing Minor or college consent

**MKTG 3791. Advanced Professional Selling.** (3 cr.; A-F or Audit; Every Spring)
Introduces advanced topics and skill development in professional selling. Emphasis on interpersonal communications, relationship management, team selling, personal productivity, and negotiations. prereq: MKTG 3741, LSBE candidate or Graphic Design with Marketing sub plan or non-LSBE Marketing minor or college consent

**MKTG 3791. Retailing.** (3 cr.; A-F only; Periodic Fall & Spring)
Principles of establishing and operating a retail business. Topics include retail market analysis and research, store layout, retail accounting, merchandise selection and financing, pricing, selling, advertising, budgets and current trends. Emphasis on retail management from a strategic perspective. prereq: 3701, LSBE
MKTG 4762. Marketing Analytics II: Advanced Metrics and Analytic Techniques. (3 cr.; A-F or Audit; Every Fall) This course builds upon the quantitative knowledge and skills that were introduced in Marketing Analytics Fundamentals, and introduces students to important customer relationship management metrics for customer acquisition, retention and defection, and customer lifetime value measures. preq: 3761, no grad credit

MKTG 4763. Marketing Analytics Practicum. (2 cr.; A-F or Audit; Every Fall) This course provides students the opportunity to apply their analytic knowledge and skills to an industry project and/or data sets. During the course, students will work with industry clients and the course instructor to formulate realistic recommendations based on their analysis of the information. preq: Marketing Analytics Major, no grad credit

MKTG 4774. International Marketing. (3 cr.; A-F only; Every Fall & Spring) Marketing across national boundaries; effects of foreign economic, legal/political, and sociocultural environments on multinational marketing strategies. preq: MGTS 3701 or MKTG 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan or non-LSBE Marketing Minor or college consent; credit will not be granted if already received for 3781; no grad credit

MKTG 4781. Marketing Management and Strategy. (3 cr.; A-F only; Every Fall & Spring) Planning, directing, and controlling an organization's marketing activity, including formulating marketing objectives, strategy, and tactics. Interpretation of information in decision making and strategy formulation. Case analysis used to develop marketing problem-solving, communication, and organization skills. preq: MGTS 3701 or MKTG 3701, MGTS 3711 or MKTG 3711, 1 other Marketing course, 90 credits, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or grad or college consent

MKTG 4795. Special Topics (Various Topics). (3 cr.; A-F only; Every Fall & Spring) Enables students, working closely with the course instructor, to explore one or more contemporary marketing issues in substantial depth. preq: LSBE cand or non-LSBE Marketing Minor or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan majors, MKTG 3701 or concurrent registration, no grad cr

MKTG 5710. Marketing for Non-Profits. (3 cr.; A-F or Audit; Periodic Spring & Summer) This course will introduce students to the dynamic world of non-profits with an emphasis placed on key marketing strategies and tactics that successful non-profits use to fulfill their mission. This course will provide an overview of various aspects and special issues related to non-profit marketing including: (1) the focus of non-profit on social impact versus maximizing profits; (2) the marketing of social services; (3) marketing's role in fundraising; (4) challenges of integrating marketing efforts among diverse stakeholders; and (5) external economic, legal and political factors that impact marketing of non-profit services. preq: MBA student or department consent

MKTG 5721. Advertising and Marketing Communications. (3 cr.; A-F or Audit; Periodic Fall & Spring) Promotional planning. Emphasis on planning for advertising, sales promotion, public relations/publicity, direct marketing, and personal selling. Importance of integrated marketing communications to organizations. preq: MBA student or department consent

MKTG 5731. Consumer Behavior. (3 cr.; A-F or Audit; Every Fall & Spring) Consumer behavior and implications for marketing strategy. Emphasis on information processing concepts, influences on behavior, and decision-making processes from both conceptual and pragmatic perspectives. Students requiring graduate credit must complete additional coursework. preq: MBA student or department consent

MKTG 5741. Developing and Marketing New Products. (3 cr.; A-F or Audit; Periodic Fall & Spring) A marketing-oriented new products management course that explores the new product development process with a focus on marketing strategies for the planning, development and launch of new products and services. preq: MBA student or department consent

MKTG 5762. Marketing Analytics II: Advanced Metrics and Analytic Techniques. (3 cr.; A-F or Audit; Every Fall) This course builds upon the quantitative knowledge and skills that were introduced in Marketing Analytics Fundamentals, and introduces students to important customer relationship management metrics for customer acquisition, retention and defection, and customer lifetime value measures. preq: MBA student or instructor consent

MKTG 5774. International Marketing. (3 cr.; A-F or Audit; Every Fall & Spring) Marketing across national boundaries; effects of foreign economic, legal/political, and sociocultural environments on multinational marketing strategies.

MAPL 5308. The Impact of Art on Social Change. (3 cr.; A-F or Audit; Every Fall) Analysis and understanding of how art influences public perception, political will and social policy. Topics include environmental protection, the labor movement, attitudes toward war, civil rights, and gay and lesbian rights. Art forms examined include drama, literature, film, music, photography, painting. preq: Grad student or instructor consent

MTAG 5110. Principles of Tribal Sovereignty I. (3 cr.; A-F or Audit; Every Fall) This course provides students with a general background of the history, development, structure, and political process of indigenous nations in their efforts to retain and exercise their sovereign powers. preq: MTAG or MTRES student or instructor consent

MTAG 5120. Principles of Tribal Sovereignty II. (3 cr.; A-F or Audit; Every Spring) This course examines the challenges facing tribal governments as they exercise their sovereignty and involves political, economic, and intergovernmental perspectives. Part one examines tribal resource management, analyzing historical use of land, land loss, and contemporary efforts to develop sustainable environmental plans for water, timber, wildlife, and subsurface resources. Part two focuses on the various means tribal governments have devised to exercise sovereignty, such as gaming, small business development, tourism, and joint ventures with partners. Part three concentrates attention at the subnational level and pays close attention to the political, legal, and economic relationships that have developed between Native nations, state governments, county governments, and municipal entities. preq: 5110 or instructor consent

MTAG 5210. Administration Governance I (Strategic). (3 cr.; A-F or Audit; Every Fall) This course will provide an overview of the integration and application of strategic management principles in tribal governments. Topics will include the development of mission statements, goals, strategies, and approaches to implementation. The course will focus on tribal strategic plans and issues specific to tribes, such as the federal-tribal relationship, tribal constitutions, and tribal ordinances and regulations. Also, the role of federal and state government policymakers as they interrelate.
with administrators in strategic management decisions will be studied. prereq: MTAG student or instructor consent

MTAG 5220. Administration and Governance II (Operations). (3 cr.; A-F or Audit; Every Spring) This course will provide an overview of organizational management theories with an emphasis on tribal governments. It will focus on the various types of tribal governments, the role of tribal managers, tribal management functions, communications processes, and management information systems design and development. It will also explore different models of delivering services on reservations, including the direct federal service model, the 638 contact model, and the self-governance compact. Also, the role of federal and state government policymakers as they interact with administrators in operations management decisions will be studied. prereq: 5210 or instructor consent

MTAG 5230. Advanced Tribal Administration and Governance I (Human Resources). (3 cr.; A-F or Audit; Every Fall) This course will focus on the theoretical and practical aspects of solving problems, the activity that takes up the majority of a tribal manager's day. Human resource management will be emphasized. The use of tribal hypothetical and real-life situations will be heavily relied upon. Case studies of reservations and tribal organizations will be utilized to define problems, collect and analyze data, and seek creative solutions. The use of analogy, brainstorming, the scientific method, systems analysis, and graphic representations will be studied, as well as the role of federal and state government policymakers as they interact with administrators on human resources matters. prereq: 5220 or instructor consent

MTAG 5240. Advanced Tribal Administration and Governance II (Project). (3 cr.; A-F or Audit; Every Spring) This course will focus on the theory and implementation of project management and managing personnel engaged in project management. It will provide an overview of project management principles and concepts. Each student will select an actual reservation project and an aspect of tribal management (e.g., health care, natural resources, housing, or other area) for his or her final research paper. Each student will describe the project from beginning to end through the lens of management theory, as well as critique the implementation of the project. Also, the role of federal and state government policymakers as they interact with administrators on project management matters will be studied. prereq: 5230 or instructor consent

MTAG 5310. Foundations of Leadership and Ethics in Indigenous Community Life and Organizations. (3 cr.; A-F or Audit; Every Fall) This course will develop a general understanding of leadership and ethics. Content will include a survey of basic philosophies, models, figures, and applications to community-based scenarios and institutions. Western scholarship will be contrasted with Indigenous perspectives and lived experience as a means of exploring cultural difference. The role of traditional values and beliefs, internalized oppression, and contemporary community institutional dynamics are core course topics. prereq: MTAG student or instructor consent

MTAG 5320. Applied Leadership and Ethics in an Indigenous Organizational Context. (3 cr.; A-F or Audit; Every Spring) This course explores leadership and ethics in an applied context. Students will explore what it means to be an effective ethical leader from a personal and community-based perspective. This involves a critical study of organizational culture and systems-based change processes. Case studies will be used to facilitate exploration and analysis. Reflecting on theories and philosophies of ethics and leadership, students will identify a personal leadership style, and determine what it means to be a decolonized leader in contemporary community life. prereq: 5310 or instructor consent

MTAG 5430. Tribal Finance, Accounting and Budgets I. (3 cr.; A-F or Audit; Every Fall) This course will provide an overview of financial terms, processes, agencies, and laws as they apply to tribal governments. It will focus on overseeing budgeting, bookkeeping, accounting, and purchasing functions; interpreting financial statements; conducting due diligence; and negotiating indirect cost rates with the federal government. Emphasis will be placed on the role of the federal government in tribal financial management, the role of tribal sovereign immunity in financial transactions, and the roles of tribal accountants and auditors. prereq: MTAG 5120, MTAG student or instructor consent

MTAG 5440. Tribal Finance, Accounting and Budgets II. (3 cr.; A-F or Audit; Every Spring) This course will focus on the federal laws and regulations that tribal managers are required to comply with annually. These laws and regulations include the Indian Gaming Regulatory Act, Title 31, the Single Audit Act, and auditing rules under the Tribal Self-Determination Act. The course will also focus on compliance with federal grants, the preparation of year-end financial statements, and the role of circulars from the federal Office of Management and Budget. The general standards for accountants and the penalties for non-compliance will be studied. The role of federal auditors and investigators will be compared to the role of tribes' internal auditors. prereq: 5430 or instructor consent

MTAG 5530. Federal Indian Law I. (3 cr.; A-F or Audit; Every Fall) This course explores the formulation, implementation, and evolution of Indian policy from pre-colonial times to the self-governance era. This course provides a chronological framework and theoretical context in which policies, programs, and events can be seen interacting with each other to produce the cumulative body of treaties, statutes, and court decisions. Students analyze major federal Indian policies that define indigenous/federal political relationships, examining the views and attitudes of policy-makers and gauging the reactions of Indigenous nations to those policies. prereq: MTAG 5520, MTAG student or instructor consent

MTAG 5540. Federal Indian Law II. (3 cr.; A-F or Audit; Every Spring) Federal Indian law has had profound affect on the lives, liberties, and properties of indigenous peoples. At times, U.S. policy and Supreme Court rulings have worked to protect aboriginal rights; at other times, these policies and decisions have had devastating consequences. This course examines the role and practice of the U.S. Supreme Court as a policy-making institution in their dealings with Indigenous nations. This examination requires us to think historically and theoretically; to question the origins and exercise of federal judicial power; and examine the application of federal law to indigenous peoples and Indian citizens. prereq: 5530 or instructor consent

MTAG 5997. Tribal Administration and Governance Directed Project. (2 cr. [max 4 cr.]; S-N only; Every Summer) The Tribal Administration and Governance Directed Project is designed to give MTAG students practical experience in the field while assisting a tribe with a project that meets their own identified priorities. prereq: 12 credits in MTAG or instructor consent

MBA 8111. Business Ethics. (2 cr.; A-F or Audit; Periodic Fall & Spring) How cultural, political, global, legal, and economic factors impact business activities. Issues of business ethics and social responsibility. prereq: MBA student or college consent

MBA 8211. Data Analysis and Statistics for Managers. (2 cr.; A-F or Audit; Periodic Fall & Spring) Applications of business statistics, data analysis, and presentation of results. Research process and design, data collection, measurement concepts, sampling design, use and interpretation of statistical techniques, research ethics, reporting, and evaluating research finding. Focus is on the managerial use and interpretation of research results. pre-req: ECON 2020 or 2030 or BUS 2500 or PMBA 2500 equivalent; MBA student or college consent

MBA 8311. Decision Making in Operations. (3 cr.; A-F or Audit; Periodic Fall & Spring) Examines managerial decision making in operations problems, including application of quantitative analysis and use of computers for production of goods or services in any type of organization. Investigates concepts and techniques related to the design, planning, control, and improvement of manufacturing and service operations. Covers topics in the areas of inventory management, capacity planning, forecasting, management of service systems,
and quality control. prereq: MGTS 3301 or BUS 2300 or PMBA 2300 or equivalent, MBA student or college consent

MBA 8333. FTE: Master's. (1 cr.; No Grade Associated; Periodic Fall & Spring) (no description) prereq: Master's student, adviser and DGS consent

MBA 8501. Accounting for Decision Making and Control. (3 cr.; A-F or Audit; Periodic Fall & Spring) Interpreting and using accounting information for managerial decision-making. Explores motivations related to creating financial statement and an understanding/appreciation of accounting information. Also examines the strengths and limitations of an organization's accounting system. pre-req: ACCT 2001, 2002 or BUS 2100 or PMBA 2100 or equivalent, MBA student or college consent

MBA 8512. Managerial Economics. (2 cr.; A-F or Audit; Periodic Fall & Spring) Application of economic theory and economic methodology to managerial decision making. Supply and demand, production, consumer behavior, business and economic forecasting, pricing and marketing strategies under differing competitive conditions, government's role, and the global market. prereq: Econ 1022 and Econ 1023 or equivalent, MBA student or college consent

MBA 8611. Financial Management and Decision Making. (3 cr.; A-F or Audit; Periodic Fall & Spring) Overview of fundamental concepts and principles of financial management and how these analyses are implemented by financial managers in making strategic financial decisions in a corporate setting. Topics include developments in capital market theory, capital budgeting analysis in terms of the NPV and real options approaches, costs of capital, long term financing, capital structure analysis and international financial strategies. prereq: FMIS 3601 or BUS 2600 or PMBA 2600 or equivalent, MBA student or college consent

MBA 8711. Strategic Marketing Management. (3 cr.; A-F or Audit; Periodic Fall & Spring) Planning, implementation, evaluation, and control of organizational marketing activities. This process includes environmental market analysis in order to achieve competitive advantage and effective resource allocation. prereq: Mktg 3701 or BUS 2700 or PMBA 2700 or equivalent, MBA student or college consent

MBA 8811. Human Resource Challenges. (2 cr.; A-F or Audit; Periodic Fall & Spring) Overview of contemporary human resource issues, human resource systems, procedures, and decisions that guide effective, efficient, and equitable management of people in organizations. prereq: MGTS 3401 or BUS 2400 or PMBA 2400 or equivalent and MBA student or college consent

MBA 8910. Improvisational Theater for Business. (1 cr. [max 3 cr.]; A-F or Audit; Periodic Summer) This course is intended to provide students a platform to build a better understanding of themselves and their relationship with others in order to develop key soft skills that are important in the modern business environment. It applies the principles of improvisational theater to help students explore and develop their ability to face risky, uncertain situations and respond effectively and efficiently. prereq: MBA student or instructor consent

MBA 8911. Strategic Management. (3 cr.; A-F or Audit; Every Spring & Summer) Formulation of corporate and business strategies that results in a sustainable competitive advantage through identifying opportunities and threats, as well as resources and capabilities of an organization. Develop an overview of levers to implement these strategies. Develop integrative thinking of applying knowledge of all functional areas of business to implement the strategies in order to achieve long-term performance of the overall organization. prereq: 8311, 8501, 8611, 8711, 8811, MBA student or college consent; credit will not be granted if already received for MBA 8411

MBA 8991. Independent Study. (1-3 cr. [max 6 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Provides opportunity for focused, integrative or interdisciplinary projects or research, under the guidance of a faculty member in various areas of business administration that extend beyond, or in greater depth than, regular courses. prereq: college consent

MBA 8994. Directed Research. (1-6 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Directed research. prereq: MBA student, college consent

MBA 8995. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer) Special topics on or integrative, interdisciplinary study of problems in accounting, economics, and business administration. prereq: MBA student or department approval

MBA 8999. Directed Research. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced study, research, and projects. prereq: college consent

MLS 8001. Theories, Methods and Applications of Graduate Study. (4 cr.; A-F or Audit; Every Fall) Introduction to theories, methods and applications of interdisciplinary liberal studies. This course provides M.L.S. students with a thorough review of analytical writing and research methods as well as an introduction to university disciplines and interdisciplinarity at the graduate level. prereq: MLS candidate or instructor consent

MLS 8501. Seminar: Community Engagement. (4 cr.; A-F or Audit; Spring Even Year) Examination of various community issues and means of addressing them through issue-identification, description, policy, and political organization. Depending on the instructor's pedagogical goals, this course may require students to engage in work off-campus with community partners. prereq: graduate student and instructor consent

MLS 8502. Seminar: International Perspectives. (4 cr.; A-F or Audit; Spring Odd Year) Topics related to opportunities and problems emerging from the steady increase in globalization that shapes our communities in the present-day. prereq: graduate student

MLS 8591. Directed Study. (1-8 cr.; A-F or Audit; Every Fall, Spring & Summer) Individualized study under supervision of the director of the liberal studies program. prereq: MLS candidate or department consent

Mathematics (MATH)

MATH 103. Basic Mathematics and Introductory Algebra. (0 cr.; S-N or Audit; Every Fall) Computational math skills and applications, including arithmetic, introductory geometry, and introductory algebra. prereq: [3 cr equiv]; cannot apply cr toward a degree. (The prepayor course fee is equal to 3 credits of resident tuition)

MATH 1005. College Algebra. (5 cr.; A-F or Audit; Every Fall, Spring & Summer) Computer based, on site course with students working at a semi-self pace taking notes in a guided notebook and completing online homework while asking the instructor questions as needed. Course topics include basic concepts of solving equations and inequalities as well as an introduction to function concepts and graphing for polynomial, rational, logarithmic, and exponential functions. prereq: Math ACT 21 or higher or MATH 0103 or department consent

MATH 1007. Algebra Review. (1 cr.; S-N or Audit; Every Fall & Spring) College-level algebra: solving equations and inequalities. Designed for students who need to review high-school algebra topics and/or supplement previous courses, such as College Algebra. prereq: Must be taken after or concurrently with MATH 1160 or 1250 or 1290 or 1296, a grade of C- or better in is required in all prerequisite courses

MATH 1024. Introduction to Contemporary Mathematics. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Increases awareness and appreciation of uses, richness, and power of mathematics. Sample topics: graph theory for management science, scheduling, linear programming, statistical sampling and inference, coding information, decision making, voting theory, game theory, geometric growth, symmetry, and patterns. prereq: Math ACT 18 or higher or SSP 0103 or department consent, a grade of C- or better in is required in all prerequisite courses

MATH 1140. Mathematics for Elementary Education I. (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall) Subject matter for effective elementary school teaching. Problem solving and structure of number systems. pre-req: IESE major and
MATH 1142. Mathematics for Elementary Education II. (3 cr.; A-F or Audit; Every Fall) Part two of subject matter for effective elementary school teaching. Properties of geometric figures, probability, statistics. prereq: 1140

MATH 1160. Finite Mathematics and Introduction to Calculus. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall, Spring & Summer) Elementary functions, matrices, graphical and algebraic methods for solving systems of linear equations and inequalities, introduction to linear programming, and abbreviated treatment of calculus with emphasis on business and social science applications. prereq: Math ACT 24 or higher or a grade of at least C- in Math 1005 or department consent; If you have received credit for 1290 or 1296 or 1596, you will not receive credit for Math 1160.

MATH 1290. Calculus for the Natural Sciences. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall & Spring) Introduction to foundations of mathematics. Non-Euclidean geometries, postulational systems, and models. History of mathematics. Introduction to foundations of mathematics.

MATH 1296. Calculus I. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall, Spring & Summer) First part of a standard introduction to calculus of functions of a single variable. Limits, continuity, derivatives, integrals, and their applications. prereq: Math ACT 27 or higher or a grade of at least C- in Math 1250 or department consent

MATH 1297. Calculus II. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall, Spring & Summer) Second part of a standard introduction to calculus. Vectors, applications of integrals, transcendental functions, series, and multivariable functions and partial derivatives. prereq: A grade of at least C- in 1290 or 1296 or 1596

MATH 3091. Independent Study. (1-3 cr. [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed reading and/or research in mathematics. Must be arranged with instructor and department head before registration. prereq: department consent

MATH 3097. Internship. (1-3 cr.; S-N or Audit; Every Fall, Spring & Summer) Practical, independent project in commercial, government, or industrial setting. Department approval required before beginning project. prereq: Math major, department consent

MATH 3101. Mathematical Theory of Interest. (3 cr.; A-F or Audit; Every Spring) Introduction to quantitative applications of interest and its related functions. Basics of Interest Rates, Annuities, Rates of Return, Loans, Bonds, Financial Risk Management, Financial Economics pre-req: Math 1297 or 1597 with a grade of C- or better

MATH 3110. Foundations of Mathematics. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall) Game Theory is the study of strategic decision making in cooperative and competitive settings. Students will survey classical results and techniques in game theory and then explore how game theoretical modeling can be used to enhance our understanding of diverse topics, including elections, ecology, business, ethics, and psychology. This course is highly collaborative and may include both group and individual projects. prereq: Math 1005 or MATH ACT of 24 or higher

MATH 3120. Mathematics Tutorial Project. (1-2 cr. [max 4 cr.]; S-N or Audit; Every Fall, Spring & Summer) Independent study for students in mathematics, engineering, or physical sciences. prereq: Math major, department consent

MATH 3298. Calculus III. (4 cr.; A-F or Audit; Every Spring) Conic sections, vectors and vector-valued functions, partial derivatives and multiple integrals, vector fields, Green's and Stokes' theorems. prereq: A grade of at least C- in 1297 or 1597

MATH 3326. Vectors and Matrices. (3 cr.; A-F or Audit; Every Fall) Solving systems of linear equations; matrix algebra; determinants; an introduction to vector spaces, subspaces, linear independence, span, basis; coordinates, matrix transformations, eigenvalues, eigenvectors, matrix factorizations and applications to computer graphics. prereq: 1296 with a grade of C- or better

MATH 3355. Discrete Mathematics. (4 cr.; A-F or Audit; Every Fall & Spring) Introduction to mathematical logic, predicates and quantifiers, sets, proof techniques, recursion and mathematical induction, recursive algorithms, analysis of algorithms, assertions and loop invariants, complexity measures of algorithms, combinatorial counting techniques, relations, graph theory. prereq: 1297 or 1597 or instructor consent, a grade of C- or better in is required in all prerequisite courses

MATH 3810. Applied Mathematics: Numerical Methods. (4 cr.; A-F or Audit; Every Spring) Methods for the numerical solution of mathematical problems. Computer representation of numbers; courses of error; introduction to interpolation, approximation, numerical integration, solution of linear and nonlinear systems, initial-value problem approximation; use of highly structured computer software such as MATLAB, Octave, Mathematical and/or SAGE. prereq: previous or concurrent registration in 3280

MATH 3941. Undergraduate Colloquium. (1 cr.; S-N or Audit; Every Fall, Spring & Summer) Exposure to UMD mathematics-related colloquia. Sixteen points required: one for attending a colloquium; one for writing an acceptable report on a colloquium (at least four must be earned through writing); up to eight for giving a colloquium: prereq: Math major or minor, department consent; must register during semester of 16th point

MATH 3995. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 6 cr.]; A-F or Audit;) Topics not available in standard curriculum.

MATH 4095. Special Topics: (Various titles to be assigned). (1-5 cr. [max 10 cr.]; S-N or Audit; Periodic Fall, Spring & Summer) Special Topics in Math

MATH 4180. Solving Industrial Mathematics Research Problems. (3 cr.; A-F or Audit; Every Spring) This course is intended for mathematics or statistics majors. The focus of the course is solving industrial mathematics research problems. Students will work in teams of three to five on a semester-long research problem from business, industry or government. Students will acquire specialized mathematical knowledge specific to the research problems posed for the semester. In addition, students will develop problem solving, teamwork, and communication skills as they design and implement a solution strategy for one of the
research problems. A business, industry or government partner will serve as a liaison for project teams. Presentation to professional partners will occur throughout the semester. A final solution product will include oral, written and video presentations. pre-req: Minimum 2 courses in MATH or STATs at about the 3xxx level, with a minimum of 3 credits each, instructor consent; no grad credit

MATH 4201. Elementary Real Analysis. (4 cr. ; A-F or Audit; Every Fall & Spring) In-depth study of concepts fundamental to the theory of single-variable calculus, including topology of the real numbers, convergence of sequences and series, function continuity, the derivative, and the Riemann integral. pre-req: 3280, 3355, a grade of C- or better in is required in all prerequisite courses, no grad credit; credit will not be granted if already received for 3299

MATH 4230. Applied Mathematics: Complex Variables. (3 cr. ; A-F or Audit; Every Spring) Complex numbers and analytic functions; complex integration; complex power series, Taylor series, and Laurent series; theory of residues; conformal mapping. pre-req: 3280 with a grade of C- or better

MATH 4240. Applied Mathematics: Operational Methods. (3 cr. ; A-F or Audit; Every Fall) Laplace transform; Fourier series, integrals, and transforms; Sturm-Liouville operator and boundary-value problems; orthogonal functions; operator solutions of partial differential equations. pre-req: 3280 with a grade of C- or better

MATH 4326. Linear Algebra. (3 cr. ; A-F or Audit; Every Fall & Spring) Systems of linear equations, matrix algebra, determinants, vector spaces, subspaces, linear independence, span, basis, coordinates, linear transformations, matrix representations of linear transformations, eigenvalues and eigenvectors, diagonalization, Gram-Schmidt orthogonalization, orthogonal projection and least squares. pre-req: A grade of at least C- in 3280, 3355, no grad credit

MATH 4370. Introduction to Abstract Algebra for Teaching Majors. (3 cr. ; A-F or Audit; Every Fall) Introduction to groups and rings appropriate for students majoring in teaching mathematics. pre-req: 3355, 4326 or 3280, a grade of C- or better in is required in all prerequisite courses, teaching math major; credit will not be granted if already received for Math 4371; no grad cr

MATH 4375. Introduction to Abstract Algebra. (3 cr. ; A-F or Audit; Every Fall) This course is intended for mathematics or statistics majors. The focus of the course is to introduce students to abstract algebra. Topics include groups, permutation, quotient groups, homomorphisms, and rings, pre-req: Math 3355 with a grade of C- or better is required and a grade of B- or better is recommended; no grad credit

MATH 5201. Real Variables. (4 cr. ; A-F or Audit; Every Fall) Limits, sequence and series of real numbers, tests for convergence, rearrangements, summability, and the class L-SQUARED. Metric spaces; continuous functions, connectedness, completeness, compactness. Banach fixed-point theorem and Piccard existence theorem for differential equations. pre-req: 4201 with a grade of C- or better

MATH 5202. Applied Functional Analysis. (3 cr. ; A-F or Audit; Spring Odd Year) Basic concepts, methods, and applications of functional analysis. Complete metric spaces, contraction mapping, and applications. Banach spaces and linear operators. Inner product and Hilbert spaces, orthonormal bases and expansions, approximation, and applications. Spectral theory of compact operators, including self-adjoint and normal operators. pre-req: MATH 5201, MATH 4326 or 5327; MATH 5327 can be taken concurrently

MATH 5233. Mathematical Foundations of Bioinformatics. (3 cr. ; A-F or Audit; Every Spring) Mathematical, algorithmic, and computational foundations of common tools used in genomics and proteomics. Topics include: sequence alignment algorithms and implementations (Needleman-Wunsch, Smith-Waterman, BLAST, Clustal), scoring matrices (PAM, BLOSUM), statistics of DNA sequences (SNPs, CpG islands, isochores, satellites), and phylogenetic tree methods (UPGMA, parsimony, maximum likelihood). Other topics will be covered as time permits: RNA and protein structure prediction, microarray analysis, post-translational modification prediction, gene regulatory dynamics, and whole-genome sequencing techniques. pre-req: MATH 3355, CS 1xxx or above, STAT 3411 or 3611

MATH 5260. Dynamical Systems. (3 cr. ; Student Option; Fall Odd Year) Fundamentals of differential equations (existence, uniqueness, continuation of solutions); linear systems, autonomous systems, and Poincare-Bendixon theory; periodic systems; discrete dynamical systems; bifurcation theory; chaos. pre-req: 3280 with a grade of C- or better

MATH 5270. Modeling with Dynamical Systems. (3 cr. ; Student Option; Spring Even Year) Application and analysis of continuous and discrete dynamical systems. Model construction, simulation, and interpretation. pre-req: 3280 with a grade of C- or better

MATH 5280. Partial Differential Equations. (3 cr. ; A-F or Audit; Fall Even Year) Introduction, emphasizing use of Fourier series, Green’s functions, and other classical techniques. pre-req: A grade of at least C- in 3280 or grad standing

MATH 5327. Advanced Linear Algebra. (3 cr. ; A-F or Audit; Every Spring) Vector spaces over fields, subspaces, linear transformations, matrix representations, change of basis, inner-product spaces, singular value decomposition, eigenspaces, diagonalizability, annihilating polynomials, Jordan form. pre-req: Graduate student or instructor consent

MATH 5330. Theory of Numbers. (3 cr. ; A-F or Audit; Spring Odd Year) Properties of integers, primes, divisibility, congruences, and quadratic reciprocity. Computational aspects include factoring algorithms and RSA cryptosystem. pre-req: 3355 with a grade of C- or better or instructor consent

MATH 5347. Applied Algebra and Cryptology. (3 cr. ; A-F or Audit; Fall Even Year) Applied algebra topics include mathematical origami, permutation games, and the Rubik’s cube. Cryptology topics include monoalphabetic substitution ciphers, RSA, primality testing, and elliptic curve cryptography. pre-req: grade of C- or better in MATH 3355 or MATH 3326 and CS 3512 or grad student

MATH 5356. Graph Theory. (3 cr. ; A-F or Audit; Every Fall) Finite graphs, including trees, connectivity, traversability, planarity, colorability, labeling, and matchings. pre-req: 3355 with a grade of C- or better or instructor consent

MATH 5366. Enumerative Combinatorics. (; 3 cr. ; A-F or Audit; Spring Odd Year) Permutations, combinations, binomial coefficients, inclusion-exclusion, recurrence relations, ordinary and exponential generating functions, Catalan numbers, selected topics from designs, finite geometries, Polya’s enumeration formula. pre-req: 3355 with a grade of C- or better

MATH 5371. Abstract Algebra I. (3 cr. ; A-F or Audit; Every Fall) Introduction to groups and rings and their applications. pre-req: 3355 or 4326 with a grade of C- or better or grad standing or instructor consent

MATH 5372. Abstract Algebra II. (3 cr. ; A-F or Audit; Every Spring) Polynomial rings, divisibility in integral domains, field extensions, finite fields, special topic, and applications. pre-req: 5371 with a grade of C- or better or instructor consent

MATH 5510. Linear Programming. (3 cr. ; A-F or Audit; Spring Odd Year) Motivation problems, modeling, theory of simplex method, duality and sensitivity analysis, large-scale problems, complexity, and Karmarkar algorithm. pre-req: 3280 or 4326, with a grade of C- or better

MATH 5530. Numerical Analysis: Approximation and Quadrature. (3 cr. ; Student Option; Every Fall) Error analysis, interpolation and approximation, numerical integration, solution of nonlinear systems. pre-req: 3280 or 4326 with a grade of C- or better, proficiency in FORTRAN or C or C ++

MATH 5540. Numerical Analysis: Systems and Optimization. (4 cr. ; Student Option; Spring Even Year) Solution of systems of linear equations; elimination and factorization methods;
ME 2105. Introduction to Material Science for Engineers. (3 cr.; A-F or Audit; Every Fall & Spring)

ME 2211. Thermodynamics. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall & Spring)
Thermodynamics, thermodynamic properties of liquids and gases, 1st and 2nd laws of thermodynamics, irreversibility and entropy. Cannot systems, work producing systems, combustion engine cycles, work absorbing systems, refrigeration cycles, psychrometrics. prereq: PHYS 2013; credit will not be granted if previously given for Engr 2110 or IE 2105.

ME 2226. Dynamics. (3 cr.; A-F or Audit; Every Fall & Spring)
Review of particle dynamics. Mechanical systems and rigid-body model. Kinematics and dynamics of plane systems. prereq: CE 2017 and Math 3280 (concurrent registration allowed)

ME 3010. Fundamentals of Machining and Manufacturing. (3 cr.; A-F or Audit; Every Fall)
Machining theory and laboratory work using milling, lathe, and drill press. Design drawings, tolerances, fits and finishes. Manufacturing processes and scheduling prereq: ENGR 1222, ME 2105, BSME or BSIE candidate

ME 3111. Fluid Mechanics. (3 cr.; A-F or Audit; Every Fall & Spring)
Mass and energy balances. Bernoulli’s Equation, momentum balance, laminar and turbulent flow, boundary layer theory, flow through porous media. prereq: Engr 2026 or ME 2226, ME 2211 or 3211, BSME candidate or instructor consent; credit will not be granted if already received for Che 3111 or CE 3221

ME 3140. System Dynamics and Control. (3 cr.; A-F or Audit; Every Fall & Spring)
Mathematical modeling of mechanical, electrical, thermal, fluid, and hybrid systems. System response using numerical integration and Laplace transforms. Fourier transform and convolution. Transfer functions and frequency response. Classical control theory. prereq: CS 1121 or 1141 or 1511 or 2121, EE 2006, Math 3280, BSME or BSEP candidate or instructor consent

ME 3222. Controls and Kinematics Laboratory. (2 cr.; A-F only; Every Fall & Spring)
Perform computer simulations and hands-on laboratory exercises to explore effective control systems design. Robotic programming exercises using industrial robots will be performed. Design and construction of mechatronic devices will be completed. prereq: 3140 with a grade of C- or better and 3230 (concurrent registration allowed)

ME 3230. Kinematics and Mechanotronics. (3 cr.; A-F only; Every Fall & Spring)
Classical closed and open form kinematics modeling will be developed. Use of Denavit Hartenberg structural analysis will be explored. Kinetic models of structures will be developed. Explores the design and use of mechatronic devices. prereq: 3140, Math 3298

ME 4050. Fundamentals of Nuclear Engineering. (3 cr.; A-F or Audit; Spring Even Year)
Introduction to the fundamentals of nuclear engineering including atomic and nuclear physics, fission, fusion, isotopes, radioactivity, nuclear reactions, radiation detection, criticality, and reactor kinetics. Overview of types of reactors and some operational considerations. prereq: Chem 1151 or Chem 1153 and 1154, Math 3280, Phys 2012 or 2015 and 2016; no grad credit

ME 4060. Machine Vision and Image Based Robot Control. (3 cr.; A-F or Audit; Fall Even Year)
Senior-level course on vision and control.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
surface modeling. Introduction to FEM usage, lab use of CAD/CAM system for solid modeling, cutter path generation, and FEM problems in vibration, stress analysis. Pre-req: IE 1225 or Engr 1222 or Engr 1226 or Engr 1224 or CE 2017 or BSME or BSEP candidate, or instructor consent; credit will not be granted if already received for IE 4145

ME 4175. Machine Design. (3 cr.; A-F or Audit; Every Fall & Spring) Analysis of mechanical components as used in mechanical devices. Theories of material failures, lubrication, and corrosion. Design of machinery considering performance, safety, packaging, wear, and recycling. Pre-req: Engr 2016 or CE 2017 and ME 2105, BSME or BSEP candidate or instructor consent; credit will not be granted if already received for IE 4175

ME 4196. Cooperative Education I. (1 cr; max 2 cr.; A-F or Audit; Every Fall, Spring & Summer) Practical work experience with employer closely associated with student’s academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Pre-req: BSME candidate, instructor consent, no grad credit

ME 4197. Mechanical Engineering Internship. (; 1 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced practical work experience with employer closely associated with student’s academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Requires more than 15 hours per week of company work. Pre-req: Upper division, instructor consent, no grad credit

ME 4255. Multidisciplinary Senior Design. (4 cr.; A-F or Audit; Every Fall & Spring) Capstone design course in mechanical engineering. Project Management, problem definition, root cause analysis, baseline analysis, alternative solutions, analysis, reporting. Societal, economic, ethical, environmental, political considerations. Oral and written reports. Work is in teams focused on industrial, research or competition-based projects. Pre-req: EMTG4110 and (ME4112 & ME3230) or (ME4112 & ME4175) or (ME3230 & ME4175) or instructor consent, no grad credit

ME 4256. Cooperative Education II. (; 2 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced practical work experience with employer closely associated with student’s academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Pre-req: 4196 or IE 4196; no grad credit

ME 4297. Mechanical Engineering Internship. (; 2 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced practical work experience with employer closely associated with student’s academic area; arranged by mutual agreement among student, department, and employer. Biweekly status reports and final written report must be submitted to department. Pre-req: Upper division, instructor consent, no grad credit

This course will introduce the up-to-date techniques of autonomous image-based robot control. The covered topics include algorithms on image acquisition, camera calibration, object identification, and visual servoing. The methods and concepts introduced will be combined with engineering applications such as obstacle avoidance in traffic safety, image-guided robotic surgery, and human-robot interaction in life support. Through this course, students will acquire both hardware and software development experiences on visual servoing, which could be directly applied to their future engineering career or advanced academic pursuits. Pre-req: CS 1511, MATH 3280, ME 3140 or equivalent or instructor consent

ME 5110. Analytic Techniques in Mechanical Engineering. (3 cr.; A-F or Audit; Every Fall) Fundamental mezzanine course on analytic techniques as applied in Mechanical Engineering, and required for the Mechanical Engineering MS degree. Topics covered include tensor analysis of linear and nonlinear elasticity, nonlinear analysis and complex variable techniques in control systems, and special functions for solution of thermodynamics and fluid-dynamics partial differential equations in a variety of coordinate systems. Computational analytic tools and techniques will be incorporated as appropriate. Pre-req: BSME major with B or better in MATH 3280 and 3298 or graduate student or instructor consent

ME 5120. Advanced Dynamics and Control. (3 cr.; A-F or Audit; Every Spring) This course covers modeling and control of linear and nonlinear mechanical and electro-mechanical systems. Topics include lumped-parameter and Lagrangian nonlinear modeling of mechanical and electro-mechanical systems, time domain response of dynamic systems, Lyapunov stability, and the control design for linear and non-linear systems. Pre-req: BSME major with B or better in ME 3140 and MATH 3280 or graduate student or instructor consent

ME 5210. Advanced Thermal Fluid Sciences. (3 cr.; A-F or Audit; Every Spring) This course covers heat transfer in fluid flowing around bodies and in tubes/ducts, energy, forced/convectional combination, laminar/turbulent flow regimes, turbulent transport and modeling, high-speed flows, viscous dissipation, variable property effects, application to heat exchange devices, and convective mass transfer. Pre-req: BSME major with B or better in ME 4112 or graduate student or consent of instructor

ME 5220. Advanced Mechanics of Materials. (3 cr.; A-F or Audit; Every Spring) This course will cover the concepts related to advanced mechanics of materials including stress, strain, material properties, energy methods including Caiglano’s Theorem, elasticity problems, advanced topics including plasticity and creep. Throughout the term of the semester students will solve engineering problems relating to these topics and will be also exposed to the numerical techniques used to solve these problems. Pre-req: BSME
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Current issues impacting health of Indian people. Causes of morbidity and mortality, including social, cultural, and economic issues. Discussion focuses on solutions to problems in context of Indian communities. prereq: 2nd year med student

MED 6102. Introduction to Rural Family Medicine and Native American Health Care. (4 cr.; P-N only; Every Fall) The Introduction to Rural Family Medicine and Native Health Care course for first year medical students illustrates the positive qualities of practicing rural family medicine in rural Minnesota and Native American communities. The course introduces students to cultural, historical and political components of Native American nations, tribes and people. This course will include lectures, panel discussion, small group discussions and simulation. Also included in this course are didactic lectures and hands-on learning of medical history taking and physical examination skills taught in a small group setting. prereq: Registered medical student

MED 6520. Foundations of Medicine. (10 cr. [max 20 cr.]; P-N only; Every Fall) This is a dense course. The course begins with an overview of biochemistry and biochemical processes required for normal cell function. Followed by several aspects of cell biology. These include discussions of cellular structure and organelles, gene expression and its control, and the mechanisms of cell division and cell death. It concludes with a discussion of membrane transport and cellular signaling. The course continues with a discussion of genetics and genomics, including the inheritance of genetic traits and the use of genetic information for the diagnosis and treatment of disease. Throughout the course, there are short segments on the principles of drug action including pharmacokinetic and pharmacodynamic considerations. A heavy emphasis is placed on antibacterial drugs, as these are essential for further drug discussion in each of the organ-based courses that follow Foundations. Towards the end of the course you will receive an introduction to embryology and the final segment covers the normal structure and function(s) of the basic tissues of the body and provides a necessary background for understanding how the various organ systems (to be studied in subsequent courses) are organized around these basic tissues. This material will be closely interfaced with fundamental principles of pathology, which focuses on cell injury and neoplasia. Normal histology that is covered includes: epithelium and glands, connective tissues, muscles, and neural tissue. prereq: Regis med student

MED 6530. Rural Medical Scholars Program I (RMSP I). (4 cr.; P-N only; Every Fall) This course is an opportunity to get out of the classroom and get into small communities to practice our skills and learn about what it’s like to be a small town physician. Students spend time getting to know the community, the healthcare system and how the two work together. prereq: Medical School Student

MED 6531. Rural Medical Scholars Program II (RMSP II). (4 cr.; P-N only; Every Fall) Rural Family Medicine, Native American and Minority students clinical, cultural, interprofessional and community experiential program. As a health care professional in training, the student will participate in acute and longitudinal care, electronic portfolio use, and Faculty Advisor interaction to develop an understanding of rural medicine and educational competencies. The preceptorship course will occur in conjunction with Rural Family Medicine. prereq: Medical Student

MED 6541. Hematology Immunology Oncology. (10 cr.; P-N only; Every Summer) Introduction to principles of human immunology and hematology. Basic science principles, including pharmacology and pathology together with clinical aspects of innate and acquired immunity within context of hematopoietic-reticular system. prereq: Regis med student

MED 6566. Cardiovascular Respiratory, Renal, Acid-Base Medicine 1. (7 cr.; P-N only; Every Fall) Integrated comprehensive overview of cardiovascular system. Anatomical, biochemical, physiological, pathological, and pharmacologic aspects of heart, blood vessels, and blood, including histology, embryology, anatomy, gross and microscopic pathology, as well as clinical features, diagnosis, and pharmacological therapy. prereq: Regis med student

MED 6567. Neurological Medicine. (15 cr.; P-N only; Every Spring) Interdisciplinary study of human nervous system, including consideration of eye and ear. Basic sciences of anatomy, behavioral science, biochemistry, microbiology, pathology, pharmacology, and physiology correlated with clinical material. prereq: Registered med student or instructor consent

MED 6724. Gastrointestinal Medicine. (9 cr.; P-N only; Every Spring) Interdisciplinary integrative course discusses fundamental concepts of anatomy, physiology, nutrition, pathology, clinical medicine, and microbiology as they relate to issues of gastrointestinal and hepatobiliary system. prereq: Registered med student

MED 6728. Cardiovascular Respiratory, Renal, Acid-Base Medicine 2. (10 cr.; P-N only; Every Fall) Maintenance and regulation of human internal environment by the respiratory system. Histology of upper airways and lungs; respiratory gas exchange; introduction to respiratory component of acid-base balance. Integrative lab covering cardiovascular-respiratory adjustments to exercise. prereq: Registered med student

MED 6762. Hormonal and Reproductive Medicine. (7 cr.; P-N only; Every Spring) Structure and function of endocrine and reproductive systems. Essential background for understanding findings of clinical medicine related to endocrine regulation of reproduction and homeostasis. prereq: Registered med student

MED 6773. Integrated Clinical Medicine. (6 cr.; O-N or Audit; Every Spring) Integration of basic, clinical, and behavioral science principles to understand the human body and its integrative function and psychosocial responses, especially in multisystem conditions. Emphasizing evidence-based medicine principles, health issues are explored over the life cycle from pediatrics to geriatrics.

MED 6788. Skin/Musculoskeletal System. (10 cr.; P-N only; Every Fall) Interdisciplinary study of integument and musculoskeletal system. Basic sciences of anatomy, microbiology, pathology, pharmacology, and physiology correlated with clinical material. prereq: Registered med student

MED 6997. Summer Internship in Medicine. (3-12 cr.; P-N or Audit; Every Summer) Medical students, typically between their first- and second-year of medical school, may elect to participate in either directed clinical experience or small group discussions and simulation. Also included in this course are didactic lectures and hands-on learning of medical history taking and physical examination skills taught in a small group setting. prereq: Registered med student or instructor consent

MST 1100. Introduction to Museums. (3 cr.; A-F or Audit; Every Fall) Students will be introduced to the history of museums and the field of museum studies. Issues of theory and practice will be examined as they relate to development, care, and use of museum and systematic collections; museum education; museum administration, exhibition development; research; and evaluation. Particular attention will be given to issues of diversity and multiculturalism; relationship of museums to changing populations and disciplinary trends legal and ethical implications of development and use of collections; and examination of diverse types of collection.

MST 1200. Introduction to Public History. (3 cr.; A-F or Audit; Every Spring) This course is designed to introduce students to the theory, methods, and practice of history outside the classroom. In this course, we will investigate the challenges of historical work in historic sites, museums, archives, mass media, cultural resource management, historic preservation, and other public history settings.

MST 3100. Introduction to Museum Education. (3 cr.; A-F or Audit; Every Spring) This course examines the progression of learning theories that have shaped the development of museum programs and exhibits over the years. To understand the wide variety of ways visitors can learn in museums we also explore how museum education has evolved since the origin of public museums over two
MU 100. Recital Hour. (0 cr.; S-N only; Every Fall & Spring)
Attendance at scheduled musical events. prereq: Concurrent registration in applied instruction

MU 200. Basic Piano Proficiency. (0 cr.; S-N only; Every Fall, Spring & Summer)
Departmental basic piano proficiency exam. prereq: 1421, 1422, 2422

MU 250. Advanced Piano Proficiency. (0 cr.; S-N only; Every Fall, Spring & Summer)
Departmental advanced piano proficiency exam. prereq: 200

MU 300. Advanced Standing Exam. (0 cr.; S-N only; Every Fall & Spring)
Applied performance requirement to qualify for advanced applied study. prereq: three semesters of 1xxx level applied study, department consent

MU 1001. Introduction to Music. (FINE ARTS,GLOBAL PER; 3 cr.; Student Option; Every Fall & Spring)
The course aims to allow students to develop life-long skills of focused listening with an emphasis on the appreciation of music that reflects the underlying social and geo-political situations of composers from around the world in both today's world and previous eras. prereq: Not for music majors or minors

MU 1003. Beethoven to the Beatles. (FINE ARTS; 3 cr.; Student Option; Periodic Spring)
Survey of 19th- and 20th-century classical, jazz, rock, pop, and ethnic music genres.

MU 1004. Music in Film. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring)
Music in Film explores several aspects of music in motion pictures including its connection to other orchestral music styles, modern and historical, and how it aids in the entertainment of the film. This course examines how many modern films use musical storytelling techniques to add to the film's narrative.

MU 1005. Jazz Studies. (CDIVERSITY,FINE ARTS; 3 cr.; A-F only; Every Fall & Spring)
Evolution of jazz: social problems in America that fostered its origin and continue to shape its development.

MU 1006. Music and the Brain. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring)
This course facilitates understanding of basic musical and neurophysiological processes underlying perception, cognition, and performance toward mindful, intentional application of music in everyday life. The course provides a common basis of music and scientific knowledge to then explore the implications for the intersection of music and brain science.

MU 1007. Cultural Diversity in the United States through the History of Rock and Roll. (CDIVERSITY; 3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Cultural Diversity in the United States as told through the lens of the history of Rock and Roll music. This course will identify the roots of rock and roll, and discuss its important role in shaping United States culture throughout its development. Special attention will be paid to African-American, Latino, and Women contributions to the idiom, as well as issues of social justice as told through the music.

MU 1010. Introductory Theory. (1 cr.; A-F only; Every Fall)
Introduction to basic Western theoretical concepts: music reading, key signatures, intervals, scale and chord construction, elementary harmonic analysis, basic time signatures and rhythms, form, terminology, elementary keyboard, transcription, and musical communication with other musicians. Prepares students for successful entry into MU 1111 (Tonal Harmony I). prereq: Music major or musical theatre major or department consent, must be taken after or concurrently with 1011; credit will not be granted if already received for Th 1114, MU 1112

MU 1111. Tonal Harmony I. (3 cr.; A-F or Audit; Every Fall)
Rudimentary study of triadic harmony from the 17th and 18th centuries. Exploration of methods of composition and analysis, harmonic functions and non-harmonic tones. prereq: Music major or music minor; credit will not be granted if already received for Mu 1010 or Th 1114

MU 1112. Ear-Training and Sight-Singing I. (1 cr.; A-F only; Every Fall)
Introduction to ear-training and sight-singing of tonal music. prereq: Music major or music minor; credit will not be granted if already received for Mu 1112 or Th 1114

MU 1121. Tonal Harmony II. (LOGIC & OR; 3 cr.; A-F only; Every Spring)
Continued study of Common Practice harmony with an introduction to species counterpoint and four-part writing. A focus on progressions and the development of phrase structures. prereq: 1111

MU 1122. Ear-Training II. (1 cr.; A-F only; Every Spring)
Continued study of ear-training and sight-singing of tonal music. prereq: 1112

MU 1311. Voice-Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus arranged group lessons. prereq: Music major, department consent, performance majors register for 3 cr. in major instrument only, all others register for 2 cr.

MU 1312. Voice-Non Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument; may be repeated

MU 1320. Fundamentals of Keyboard Technique for Beginning Piano Students. (2 cr.; A-F or Audit; Every Fall & Spring)
This course provides preliminary group piano instruction for those who cannot read music and who have no prior piano experience. It is an introduction to keyboard skills and musicianship designed to develop basic musical and functional skills such as keyboard orientation, reading music notation, harmonization and improvisation, and beginning technical skills through study and performance of a wide variety of solo and ensemble repertoire.

MU 1321. Piano-Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1322. Piano-Non Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument; may be repeated

MU 1325. Jazz Piano-Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus arranged group lesson. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1326. Jazz Piano-Non Major. (1 cr. [max 12 cr.]; A-F only; Every Fall & Spring)
Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 1327. Jazz Applied. (2 cr. [max 20 cr.]; A-F or Audit; Every Fall & Spring)
Individual instruction in jazz music, focusing on jazz literature, jazz improvisation and jazz styles. For jazz studies majors only, prereq: 2803, instructor consent

MU 1331. Organ-Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus arranged group lesson. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1332. Organ-Non Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument; may be repeated

MU 1350. Violin - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual violin lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 1351. Violin - Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual violin lesson weekly plus arranged group lesson. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1352. Viola - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual violin lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1353. Viola - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual viola lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1354. Cello - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual cello lesson one half hour weekly.
prereq: Non-music major or music secondary instrument

MU 1355. Cello - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual cello lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1356. Harp - Non-Majors. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual harp lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1357. Harp - Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual harp lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1358. Bass - Non-Majors. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Individual bass lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1359. Bass - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual bass lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1360. Clarinet - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual clarinet lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1361. Clarinet - Major. (2-3 cr. [max 18 cr.]; A-F only; Every Fall & Spring)
Individual clarinet lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1362. Saxophone - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual saxophone lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1363. Saxophone - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual saxophone lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1364. Flute - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual flute lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1365. Flute - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual flute lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1366. Oboe - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual oboe lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1368. Bassoon - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual bassoon lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1369. Bassoon - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual bassoon lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1370. Trumpet - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual trumpet lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1371. Trumpet - Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring)
Individual trumpet lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1372. Trombone - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual trombone lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1373. Trombone - Major. (2-3 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual trombone lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1374. French Horn - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual French horn lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1375. French Horn - Major. (2-3 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual French horn lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1376. Tuba - Non-major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual tuba lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1377. Tuba - Major. (2-3 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual tuba lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1378. Euphonium - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual euphonium lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1379. Euphonium - Major. (2-3 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual euphonium lesson weekly plus assigned group lesson. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1381. Percussion-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus assigned group lessons. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1382. Percussion - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Individual lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1391. Classical Guitar-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus assigned group lessons. prereq: Music major;
performance majors register for 3 cr., all others register for 2 cr.

MU 1392. Classical Guitar - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual lesson one half hour weekly.
prereq: Non-music major or music major secondary instrument

MU 1395. Jazz Guitar-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring)
Individual lesson weekly plus assigned group lessons. prereq: Music major;
performance
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MUS 1396. Jazz Guitar - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer)
   Individual lesson one half hour weekly, prereq: Non-music major or music major secondary instrument

MUS 1398. Pop Styles Guitar- Non Major. (1 cr. [max 12 cr.]; A-F only; Every Fall, Spring & Summer)
   Individual lesson one half hour weekly, prereq: Non-music major or music major secondary instrument

MUS 1411. Diction: Italian and English. (1 cr. ; A-F or Audit; Every Fall)
   Proper pronunciation of English and Italian as applied to vocal literature. prereq: Principal instrument voice or instructor consent

MUS 1412. Diction: German. (1 cr. ; A-F or Audit; Spring Even Year)
   Proper pronunciation of German as applied to vocal literature. prereq: 1411 or instructor consent

MUS 1413. Diction: French. (1 cr. ; A-F or Audit; Spring Odd Year)
   Proper pronunciation of French as applied to vocal literature. prereq: 1411 or instructor consent

MUS 1421. Piano Class I. (1 cr. ; A-F or Audit; Every Fall)
   This course in keyboard musicianship is the first of a two semester sequence of class piano. The course focuses on the development and improvement of keyboard skills in the areas of technique, performance, improvisation, harmonization, transposition, sight-reading, and elementary ensemble skills. The course is intended to develop basic keyboard competency while reinforcing students’ musicianship skills. prereq: Music major, music minor, musical theatre major or instructor consent

MUS 1422. Piano Class II. (1 cr. ; A-F or Audit; Every Spring)
   This course in keyboarding musicianship is the second of a two-semester sequence of class piano. It is a continuation of MUS 1421, focusing on developing increased ability with regard to technical ability, artistry, musicianship, and fundamental skills. Successful course completion is achieved with basic keyboard competency of early intermediate to intermediate levels. prereq: MUS 1421, equivalent CE or instructor consent

MUS 1440. Survey of Instrumental Techniques. (1 cr. ; A-F or Audit; Every Spring)
   Beginning group instruction of pedagogy, technique and tone production principles on percussion, brass woodwinds and strings. prereq: Music major or instructor consent

MUS 1441. Vocal Techniques. (1 cr. ; Student Option; Every Spring)
   Beginning group instruction in voice and vocal pedagogy: principles of vocal acoustics. prereq: Music major or instructor consent

MUS 1442. Percussion Techniques. (1 cr. ; A-F or Audit; Every Fall)
   Beginning group instruction and pedagogy on instruments in the percussion family: principles of percussion acoustics. prereq: Music major or instructor consent

MUS 1501. Concert Band. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Study and performance of transcribed and original concert literature. prereq: Instructor determines placement

MUS 1502. Symphonic Wind Ensemble. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Study and performance of symphonic wind ensemble and contemporary band literature by a select group. prereq: Instructor determines placement

MUS 1503. Symphony Orchestra. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Rehearsal and performance of representative musical literature for symphony orchestra. prereq: Instructor determines placement

MUS 1504. Chamber Orchestra. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Rehearsal and performance of chamber orchestra literature. prereq: instructor consent

MUS 1505. Jazz Ensemble. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Study and performance of large jazz ensemble literature. prereq: Instructor determines placement

MUS 1510. Concert Chorale. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Rehearsal and performance of representative choral literature from a variety of periods and cultures. prereq: Instructor determines placement

MUS 1511. University Singers. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   A select group for study and performance of distinctive choral literature from diverse historical periods, cultures, and languages. Regional tour usually taken during spring semester. Extended domestic or international tours when possible. prereq: Instructor determines placement

MUS 1512. Chamber Singers. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Study and performance of vocal chamber music. prereq: concurrent registration in 1511 or 4511; instructor determines placement

MUS 1513. Vocal Jazz Ensemble. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
   Study and performance of music for vocal jazz ensemble. prereq: Instructor determines placement

MUS 1515. Percussion Ensemble. (1 cr. [max 10 cr.]; A-F or Audit; Every Fall & Spring)
   Study and performance of diverse repertoire for the percussion ensemble: historically significant works, contemporary works, world music, popular music, and new works. For both music majors and non-majors. prereq: Instructor consent; maximum of 10 credits between MUS 1515 and 4515

MUS 1541. Chamber Music. (; 1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
   Introductory course to the music of the world. This class will introduce you to a diverse musical repertoire and non-traditional approaches to music. We will study the music of a variety of cultures and societies as an expression of meaningful human interaction.

MUS 2001. Ethnic and Folk Music of the World. (FINE ARTS; 3 cr.; Student Option; Every Fall & Spring)
   Introductory course to the music of the world. This class will introduce you to a diverse musical repertoire and non-traditional approaches to music. We will study the music of a variety of cultures and societies as an expression of meaningful human interaction.

MUS 2003. Survey of American Music. (FINE ARTS,CDIVERSITY; 3 cr.; Student Option; Every Fall & Spring)
   Examines the history and evolution of musical cultures in the United States. Music, as well as other artistic traditions and social customs, of Native Americans, African Americans, European Americans, and Mexican Americans will be studied throughout the course.

MUS 2005. African Roots of American Music. (FINE ARTS; 3 cr.; Student Option; Every Spring)
   This course defines and examines the musical and cultural significance of West Africa and its indelible impression on Western music and culture (particularly in America). Music and culture is traced from West Africa, through South America and Latin America, and on to North America. Class material ranges from historical West African tradition through today's American popular music.

MUS 2105. Composition I. (; 2 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring)
   Beginning music composition technique leading to creation of original works. prereq: 1121 or 1122

MUS 2110. Jazz Theory. (2 cr.; A-F or Audit; Every Spring)
   Introduction to jazz harmony, chord scale relationships, and jazz piano skills. prereq: 1111, 1421 or instructor consent

MUS 2111. Tonal Harmony III. (; 3 cr.; A-F only; Every Fall)
   Continued study of tonal theory with an emphasis on late 18th and early 19th century methods of composition and analysis. prereq: 1102 or 1121

MUS 2112. Ear-Training III. (; 1 cr.; A-F only; Every Fall)
   Continued study of ear-training and sight-singing of tonal music. prereq: 1122

MUS 2121. Tonal Harmony IV. (; 3 cr.; A-F only; Every Spring)
   Continued study of tonal theory with an emphasis on 19th century methods of composition and an introduction to 20th
MU 2122. Ear-Training, Sight Singing and Improvisation. (1 cr.; A-F or Audit; Every Spring) Continued study of ear-training and sight-singing of tonal music; introduction to post-tonal music and basic principles and techniques of improvisation. prereq: 2112

MU 2443. Woodwind Techniques. (1 cr.; A-F or Audit; Every Fall) Beginning group instruction of pedagogy, technique and tone production principles on woodwind instruments. prereq: Music major or instructor consent

MU 2445. String Techniques. (1 cr.; A-F or Audit; Every Spring) Beginning group instruction of pedagogy, technique and tone production principles on orchestral string instruments. prereq: Music major or instructor consent

MU 2605. Introduction to Music Education. (1 cr.; A-F or Audit; Every Spring) Introduction to the music education profession. Includes career options, history of the profession, professional writings, and current research. prereq: Music Ed major or instructor consent

MU 2802. Jazz Improvisation I. (2 cr.; A-F or Audit; Every Fall) Beginning techniques and concepts. prereq: 2110

MU 2803. Jazz Improvisation II. (2 cr.; A-F or Audit; Every Spring) Study and development of improvisational facility as used in the jazz idiom. prereq: 2101, 2802 or instructor consent

MU 3101. Form and Analysis. (2 cr.; A-F or Audit; Every Fall) Overview of form in music; structure from Renaissance through 20th-century. prereq: 2121, 2122

MU 3105. Composition II. (2 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring) Continued study of musical composition techniques leading to creation of original works. prereq: 2105

MU 3201. Music History I. (3 cr.; A-F or Audit; Every Fall) Survey of Medieval, Renaissance, Baroque, and Classical eras of Western music, with an emphasis on the cultural, literary, religious and socio-political contexts in which master composers developed. prereq: Mu 1121/1122 or instructor consent

MU 3202. Music History II. (3 cr.; A-F or Audit; Every Spring) Survey of Romantic, Modern and Contemporary eras of music, emphasizing the increasingly non-Western influences and cross-cultural connections on the development of European artistic values into a global aesthetic. prereq: 3201 or instructor consent

MU 3211. Art Song Literature. (2 cr.; A-F or Audit; Fall Odd Year) Survey of art song, emphasizing German, French, and English compositions and composers. prereq: Mu 1121, 1122, music major or instructor consent

MU 3212. Opera Literature. (2 cr.; A-F or Audit; Fall Even Year) Survey of opera solo and ensemble literature from Italian, German, French, English, and American traditions. prereq: [1121, 1122], music major or instructor consent

MU 3300. Junior Recital. (1 cr. [max 3 cr.]; A-F or Audit; Every Fall & Spring) Preparation and presentation of a solo performance. For performance majors required to complete a recital in the next-to-final year of their program. prereq: department consent, may be repeated

MU 3350. Half-Recital. (0 cr.; S-N or Audit; Every Fall & Spring) Preparation and public presentation of approximately 25 minutes of music appropriate to the student's principal instrument. Primarily for music education majors.

MU 3510. Opera Studio. (1 cr. [max 10 cr.]; A-F or Audit; Every Fall & Spring) Production techniques and performances of solo and ensemble opera literature. prereq: instructor consent

MU 3600. Music in the Elementary Classroom. (3 cr.; A-F or Audit; Every Fall & Spring) Functional skills, methods, and materials for teaching music in elementary school classrooms: Music notation, elements of music, philosophies and methodologies, curriculum design and implementation, integrated arts experiences. prereq: Successful completion of IESE 1010; credit will not be granted if already received for MU 1601 and 3601

MU 3605. Teaching Classroom Music. (4 cr.; A-F or Audit; Every Fall) Philosophy, theory, techniques of instruction for general classroom music, styles and genres, and techniques of score interpretation. prereq: Music major or instructor consent

MU 3606. Field Experience: Classroom Music Pre K-8. (1 cr.; A-F or Audit; Every Fall) Observations and classroom teaching in general music classrooms grades Pre-K through 8. Supervised by music education faculty member from the department of music, in cooperation with general music teachers. prereq: 45 cr., music ed major, concurrent registration in Mu 3608

MU 3607. Instrumental Music Methods. (3 cr.; A-F or Audit; Every Spring) Methods and materials for teaching instrumental students in the secondary setting: role and extent of instrumental music in the school curriculum, philosophies and current trends in instructional music education, recruiting, scheduling, administrative tasks, literature, organizing and training athletic bands. prereq: music major or instructor consent

MU 3608. Teaching Elementary Music I. (2 cr.; A-F or Audit; Every Fall) Philosophy, theory, techniques of instruction for general classroom music, grades K-8. prereq: 45 cr., music ed major or instructor consent; credit will not be granted if credit was received for 3606.

MU 3609. Teaching Elementary Music II. (2 cr.; A-F or Audit; Every Spring) Continued study of concepts of philosophy, theory, techniques of instruction for general classroom music, grades K-8. prereq: MU 3606, 3608 or instructor consent; credit will not be granted if credit was received for 3605.

MU 3627. Art of Accompanying: Vocal Music. (2 cr.; A-F or Audit; Fall Even Year) Vocal accompanying (art song, recitative and aria, choral music, and functional skills (e.g., score reading, keyboard harmony). Vocal coaching techniques, listening to standard vocal repertoire, performance. prereq: instructor consent

MU 3628. Art of Accompanying: Instrumental Music. (2 cr.; A-F or Audit; Spring Odd Year) Instrumental accompanying (strings, brass, and woodwinds) and functional skills (e.g., score reading, keyboard harmony). Rehearsal techniques, listening to standard instrumental repertoire, performance. prereq: instructor consent

MU 3701. Choral Conducting and Methods I. (3 cr.; A-F or Audit; Every Fall) Conducting, vocal pedagogy, and methods and materials related to choral rehearsal, emphasizing elementary and middle/junior high, including beginning instruction in leading musical ensembles, meter patterns, conventional gestures, instrumental transposition, choral techniques. prereq: instructor consent

MU 3702. Choral Conducting and Methods II. (3 cr.; A-F or Audit; Every Spring) Continued conducting instruction, with methods and materials related to high school choral ensembles. prereq: MU 3701 or instructor consent

MU 3703. Choral Conducting. (1 cr.; A-F or Audit; Every Fall) Conducting techniques and score interpretation applied to choral ensembles. Not for students in the vocal music education emphasis. prereq: 2701 or instructor consent; credit will not be granted if credit already received for MU 3701 or 3702

MU 3705. Instrumental Conducting I. (1 cr.; A-F or Audit; Every Fall) Intermediate techniques, reading, and interpretation of full and condensed orchestral, band, and vocal scores; lab practice in rehearsal procedures. prereq: 2701 or instructor consent

MU 3706. Instrumental Conducting II. (1 cr.; A-F or Audit; Every Spring)
Advanced techniques, reading, and interpretation of full and condensed orchestral, band, and vocal scores; lab practice in rehearsal procedures. prereq: 3705 or instructor consent

MU 3805. Jazz Writing I. (2 cr. ; A-F or Audit; Fall Even Year) Transpositions, voicings, and arranging concepts for large and small jazz ensembles; development of composition in jazz idiom. prereq: Mu [2121, 2122] or instructor consent

MU 3806. Jazz Writing II. (2 cr. ; A-F or Audit; Spring Odd Year) Continuation of arranging concepts for large and small jazz ensembles; further development of composition in jazz idiom, prereq: Mu 3805 or instructor consent

MU 3807. Jazz Literature. (2 cr. ; A-F or Audit; Fall Even Year) Learn and memorize standard jazz repertoire. prereq: Music majors or instructor consent.

MU 3991. Independent Study. (1-3 cr. [max 6 cr.] ; A-F or Audit; Every Fall & Spring) Directed study in area of student interest arranged with instructor before registration. prereq: instructor consent

MU 3995. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 9 cr.] ; A-F or Audit; Periodic Summer) Selected topics defined by type, period, or composer. prereq: instructor consent

MU 3997. Field Study in Music. (1-4 cr. ; A-F or Audit; Periodic Fall & Spring) Off-campus travel, research, and creative activities in specialized area. Credit allowed depends on nature and scope of study. Requires advance planning with faculty sponsor. prereq: Department consent required

MU 4101. Instrumental Arranging. (2 cr. ; A-F or Audit; Every Fall) Idiomatic scoring for instruments; individual assignments in problems and possibilities of various instrument combinations. prereq: Mu 2121, 2122 or instructor consent

MU 4103. Contrapuntal Techniques. (2 cr. ; A-F or Audit; Every Spring) Study of, and practice in, use of polyphonic devices in Western art music. prereq: Mu 2121, 2122 or instructor consent

MU 4105. Composition III. (2 cr. [max 4 cr.] ; A-F or Audit; Every Fall & Spring) Advanced creative composition; individual assignments in various contexts. prereq: 3105

MU 4201. Piano Literature. (3 cr. ; A-F or Audit; Spring Odd Year) Study of representative piano literature from various periods of music history. prereq: Music major or instructor consent

MU 4300. Senior Recital. (1 cr. [max 2 cr.] ; A-F or Audit; Every Fall & Spring) Preparation and public presentation of a solo performance of at least 50 minutes of music appropriate to the student's principal instrument or principal compositional media. This is the capstone requirement for students in music performance or theory-composition.

MU 4311. Voice-Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4312. Voice - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall, Spring & Summer) Individual lesson one half hour weekly. prereq: Non-Music major or music major secondary instrument

MU 4321. Piano-Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4322. Piano - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall, Spring & Summer) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4325. Jazz Piano-Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4331. Organ-Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4332. Organ - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4350. Violin - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall, Spring & Summer) Individual violin lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4351. Violin - Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual violin lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.; MU 300

MU 4352. Viola - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall, Spring & Summer) Individual viola lesson; one-half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4353. Viola - Major. (2-3 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual viola lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.; MU 300

MU 4354. Cello - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual cello lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4355. Cello - Major. (2-3 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual cello lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.; MU 300

MU 4356. Harp - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual harp lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4357. Harp - Major. (2-3 cr. [max 12 cr.] ; Student Option; Every Fall & Spring) Individual harp lesson weekly plus arranged group lessons. prereq: Music major, MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4358. Bass - Non-Major. (1 cr. [max 12 cr.] ; Student Option; Every Fall & Spring) Individual bass lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4359. Bass - Major. (2-3 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual bass lesson weekly plus arranged group lessons. prereq: Music major, MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4360. Clarinet - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual clarinet lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4361. Clarinet - Major. (2-3 cr. [max 12 cr.] ; A-F only; Every Fall & Spring) Individual clarinet lesson weekly plus arranged group lessons. prereq: Music major, MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4362. Saxophone - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall, Spring & Summer) Individual saxophone lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4363. Saxophone - Major. (2-3 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual saxophone lesson weekly plus arranged group lessons. prereq: Music major, MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4364. Flute - Non-Major. (1 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual flute lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4365. Flute - Major. (2-3 cr. [max 12 cr.] ; A-F or Audit; Every Fall & Spring) Individual flute lesson weekly plus arranged group lessons. prereq: Music major, MU 300; performance majors register for 3 cr., all others register for 2 cr.
MU 4366. Oboe - Non-major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual oboe lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4367. Oboe - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual oboe lesson weekly plus arranged group lessons. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4368. Bassoon - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual bassoon lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4369. Bassoon - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual bassoon lesson weekly plus arranged group lesson. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4370. Trumpet - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual trumpet lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4371. Trumpet - Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring) Individual trumpet lesson weekly plus arranged group lessons. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4372. Trombone - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall, Spring & Summer) Individual trombone lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4373. Trombone - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual trombone lesson weekly plus arranged group lesson. prereq: Music major; MU 300; performance major register for 3 cr., all others register for 2 cr.

MU 4374. French Horn - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual French Horn lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4375. French Horn - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual French Horn lesson weekly plus arranged group lessons. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4376. Tuba - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual tuba lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4377. Tuba - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual tuba lesson weekly plus arranged group lessons. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4378. Euphonium - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual euphonium lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4379. Euphonium - Major. (2-3 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual euphonium lesson weekly plus arranged group lessons. prereq: Music major; MU 300; performance majors register for 3 cr., all others register for 2 cr.

MU 4381. Percussion-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4382. Percussion - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4383. Classical Guitar-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4384. Classical Guitar-Non Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4395. Jazz Guitar-Major. (2-3 cr. [max 12 cr.]; A-F only; Every Fall & Spring) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 4396. Jazz Guitar - Non-Major. (1 cr. [max 12 cr.]; A-F; Audit; Every Fall & Spring) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4501. Concert Band. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of concert literature; prereq: Instructor determines placement

MU 4502. Symphonic Wind Ensemble. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of symphonic wind ensemble and contemporary band literature by a select group. prereq: Instructor determines placement

MU 4503. Symphony Orchestra. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Rehearsal and performance of representative literature for symphony orchestra. prereq: Instructor determines placement

MU 4504. Chamber Orchestra. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of chamber orchestra literature. prereq: Instructor determines placement

MU 4505. Jazz Ensemble. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of large jazz ensemble literature. prereq: Instructor determines placement

MU 4510. Concert Chorale. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of representative choral literature from various style periods and cultures. prereq: Instructor determines placement

MU 4511. University Singers. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) A select group for study and performance of distinctive choral literature from diverse historical periods, cultures, and languages. Regional tour usually taken during Spring semester. Extended domestic or international tours when possible. prereq: Instructor determines placement

MU 4512. Chamber Singers. (1 cr. [max 6 cr.]; A-F; Audit; Every Fall & Spring) Study and performance of vocal chamber music. prereq: concurrent registration in 1511 or 4511; instructor determines placement

MU 4513. Vocal Jazz Ensemble. (1 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Study and performance of music for vocal jazz ensemble. prereq: Instructor determines placement

MU 4515. Percussion Ensemble. (1 cr. [max 10 cr.]; A-F or Audit; Every Fall & Spring) Study and performance of diverse repertoire for the percussion ensemble; historically significant works, contemporary works; world music; popular music; and new works. For both music and non-majors. prereq: Instructor consent; maximum of 10 credits between MU 1515 and 4515

MU 4541. Chamber Music. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) Study and performance of chamber music literature, classical and/or jazz. prereq: instructor consent

MU 4600. Vocal Pedagogy. (1 cr.; A-F or Audit; Every Fall) In-depth exploration of healthy vocal production: anatomy, mechanics of breath management, laryngeal function, resonance, and vocal registration. Related topics are teaching methods, solutions to typical vocal problems, and repertoire for the beginning student. This course prepares vocal performance students to register for Applied Music Teaching MU 4601, in a subsequent semester. prereq: Vocal Performance majors, MU 300, minimum 90 credits; no grad credit

MU 4601. Applied Music Teaching. (1 cr.; max 2 cr.; A-F or Audit; Every Fall & Spring) Procedures and materials for class and individual instruction in approved fields of applied music; evaluation of solo literature; discussion of approved and experimental pedagogical practice; lesson observation; and supervised student teaching. prereq: instructor consent

MU 4621. Piano Pedagogy and Practicum I. (2 cr.; A-F or Audit; Fall Odd Year)
Study of chamber music literature with emphasis on student's major applied area. prereq: Grad student or instructor consent

MU 5208. Vocal Chamber Literature. (1 cr.; A-F or Audit; Periodic Fall & Spring)
A survey of standard repertoire for solo voice with chamber ensembles. prereq: Grad student or instructor consent

MU 5510. Opera Studio. (1 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)
Opera production techniques; performance of solo and ensemble opera literature. prereq: 3510 or equivalent, Grad student or instructor consent

MU 5627. Art of Accompanying: Vocal Music. (2 cr.; A-F or Audit; Fall Even Year)
Vocal accompanying art song, recitative and aria, choral music, and functional skills (e.g., score reading, keyboard harmony). Vocal coaching techniques, listening to standard vocal repertoire, and performance. prereq: Graduate Enrollment; credit will not be granted if already received for MU 3627

MU 5628. Art of Accompanying: Instrumental Music. (2 cr.; A-F or Audit; Spring Odd Year)
Instrumental accompanying (string, brass, and woodwinds) and functional skills (e.g., score reading, keyboard harmony). Rehearsal techniques, listening to standard instrumental repertoire, performance. prereq: Graduate enrollment; credit will not be given if already received for MU 3628

MU 5695. Special Topics: (Various Titles to be Assigned). (. ; 1-3 cr. [max 27 cr.]; A-F or Audit; Periodic Fall & Spring)
Selected topics of interest to music educators concerning philosophy, history, and teaching/learning theory and practice. prereq: instructor consent; can apply max 6 cr to grad program

MU 5991. Independent Study. (1-3 cr.; A-F or Audit; Every Fall & Spring)
Directed study in areas of student interest arranged with instructor before registration. prereq: Min 60 cr or Grad Student or instructor consent; can apply max 6 cr to a Grad program

MU 5995. Special Topics: (Various Titles to be Assigned). (. ; 1-3 cr. [max 6 cr.]; A-F or Audit; Periodic Summer)
Selected studies in topics defined by type, period, or composer. prereq: instructor consent

MU 8101. Graduate Music Theory. (2 cr.; A-F or Audit; Every Spring)
Advanced analytical studies of representative historical musical compositions. Students will utilize multiple analytical processes and compose model pieces. prereq: Graduate student or instructor consent

MU 8222. Music Bibliography and Research. (3 cr.; A-F or Audit; Every Fall)
Research methods in music; preparation for writing plan B project. prereq: Grad student or instructor consent

MU 8300. Graduate Recital. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring)
Preparation and presentation of a solo musical performance. prereq: Grad student, instructor consent

MU 8301. Graduate Applied Music: Major Instrument. (2 cr. [max 10 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Studio lesson on major instrument or voice; one-half hour per week per credit. prereq: Advanced proficiency, grad student, instructor consent

MU 8302. Graduate Applied Music: Secondary Instrument. (1 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer)
(no description) prereq: Master's student, adviser and DG consent

MU 8401. Graduate Music Pedagogy. (1 cr.; A-F or Audit; Every Spring)
Principles and techniques of music pedagogy with emphasis on the student's applied field of study. prereq: Graduate Student or instructor consent

MU 8600. Methods of Research in Music Education. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Survey and analysis of current issues in music education research and/or practice. prereq: Grad student or instructor consent

MU 8601. Foundations of Music Education. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Principles and foundations of philosophical aesthetics, psychology of music, music advocacy, history of music education, current issues and research in music learning. prereq: Grad student or instructor consent

MU 8605. Curricular Trends in Music Education. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Techniques, theories, and models of music and arts leadership; considerations for supervising music personnel, facilities, budgets, curricular programs, and policies. prereq: Grad student or instructor consent

MU 8701. Graduate Applied Conducting. (1-2 cr. [max 12 cr.]; A-F or Audit; Periodic Fall & Spring)
Studio lessons in conducting; one half-hour per week per credit. prereq: 3702, 3706 or equivalent; Graduate Student or instructor consent

MU 8899. Directed Project in Music Education. (1-12 cr.; A-F or Audit; Periodic Fall & Spring)
Directed project. Plan B. Research project on selected theoretical or practical issue/topic in Music Education. prereq: Grad, instructor consent

MU 8900. Psychology of Music. (3 cr. [max 9 cr.]; A-F or Audit; Every Spring)
The nature of musical behaviors and how they are perceived. Understanding physical properties of musical sound, fundamental concepts concerning musical measurement
and musical preference. prereq: Grad student, instructor consent

MU 8991. Independent Study. (1-2 cr. [max 6 cr.]; A-F or Audit; Periodic Fall & Spring)
Directed study in areas of student interest arranged with instructor before registration; written report required. prereq: Grad student, instructor consent

Ojibwe Education (OJED)

OJED 3100. Advanced Ojibwe Grammar and Narrative. (4 cr.; A-F only; Periodic Fall)
Advanced study of grammatical forms in Ojibwe; identification and conjugation of major verb types; formation of simple and complex sentences; language learning styles. prereq: 3101, 3102, 3103, 3104 (concurrent registration allowed), admission to Ojibwe elem/middle school program, two years college-level Ojibwe or AMIN 2204 or instructor consent

OJED 3102. Historical and Contemporary Issues in American Indian Education. (3 cr.; A-F only; Periodic Fall)
Past and present educational experiences of American Indian people in the U.S.; professional conduct and dispositions for teachers; best practices in contemporary American Indian education. prereq: 3100, 3101, 3104, Comp 3140 (concurrent registration allowed), admission to Ojibwe elem/middle school program

OJED 3200. Ojibwe Language for Teachers. (4 cr.; A-F only; Periodic Spring)
Provides pre-service teachers the requisite knowledge to interact with students in a classroom. General and specialized language for each of the core subjects taught, daily routines, and common classroom discourse. Relevant methods for teaching Ojibwe language in the classroom. prereq: 3100, 3201, 3202, 3203, 3204, 3206, 3114 (concurrent registration allowed), admission to Ojibwe elem/middle school program

OJED 4100. Conversational Ojibwe for the Classroom and Community. (4 cr.; A-F only; Periodic Fall)
Applications of Ojibwe language use to interactions between school and the surrounding community. Key vocabulary, phrases, and dialogues; strategies through which this material may be shared with the community at large. prereq: 3200, 4101, 4102, 4103, 4104 (concurrent registration allowed), admission to Ojibwe elem/middle school program or instructor consent, no grad credit

OJED 4200. Ojibwe Language Methods. (4 cr.; A-F only; Periodic Spring)
Methods for teaching Ojibwe, an endangered, indigenous language. Curriculum development to support Ojibwemowin; grammatical structure of the Ojibwe language; indigenous language revitalization movement; developmental and cognitive understanding of children, especially as related to language learning. prereq: 4100 or instructor consent, 4201, 4202, 4203 (concurrent registration allowed), admission to Ojibwe Elem/Middle School Program, successful completion of block one, no grad credit

OJED 5310. American Indians and Special Education. (4 cr.; A-F or Audit; Fall Even Year)
Exploration of disability awareness in traditional and contemporary native culture, exploring historical and contemporary issues effecting American Indian students in special education. Overview of special education including standards, law theories, rules, and examination of the high incidence of American Indians in special education including FAS, autism, biological and environmental conditions. Portfolio requirements will be introduced. A field component will accompany this course. prereq: Naadamahaadwin Tribal Special Education cohort (special education licensure)

Pharmacy (PHAR)

PHAR 1001. Orientation to Pharmacy. (2 cr.; Student Option; Every Fall, Spring & Summer)
You may know that pharmacists are responsible for the dispensation of medications, but did you know that pharmacists play a critical role in the healthcare process? By ensuring that their patients receive the best overall care? Designed to help you better understand the world of pharmacy, this online pharmacy course will introduce you to exciting profession and help you gain an understanding of the impact pharmacists have in the patient care process. This course examines what training is necessary for success in the pharmacy field, demonstrates the roles a pharmacist can have in patient care, research and academia, and provides virtual tours of various settings in which pharmacists work. This is not a self-study course. While it is completely online, there are deadlines for assignments throughout the semester. No late registrations will be accepted. Course information is sent to the U of M email addresses of registered students shortly before, and/or on, the first day of classes each Fall, Spring, and Winter term. For more information, contact phar1001@umn.edu or 612-624-7976.

PHAR 1002. Medical Terminology. (2 cr.; Student Option; Every Fall, Spring & Summer)
Interested in learning the difference between an antigen and an antibiotic? During this course, you will not only increase your medical vocabulary by more than 2500 words in a self-paced manner, you will also learn to identify and articularly describe a wide variety of medical conditions and processes. Communication related to disease states, procedures, and diagnostics in health care can sometime seem like another language. This course recognizes medical abbreviations, relate terms to procedures and diagnostics, and comprehend the meaning of medical terminology by using word elements. If you are interested in the health care field or would like to understand more about your own medical care, this course is a great place to start. This is a completely online, self-paced course but runs on an accelerated 10-week schedule each Fall, Spring, and Summer term. For more information, contact phar1002@umn.edu or 612-624-7976.

PHAR 1003. Non-Prescription Medications and Self-Care: Treating Minor Conditions. (2 cr.; Student Option; Every Fall, Spring & Summer)
Non-prescription medications and dietary supplements comprise a large market within the healthcare industry. Throughout this course, you’ll learn about these medications and other self-care remedies available to treat many different medical conditions. For each condition discussed, you will learn basic causes, signs and symptoms, self-care guidelines, and when to see a healthcare provider. For medications discussed you will learn the basic mechanism of action, uses, and potential side effects. This course will help you gain a better understanding of how non-prescription and self-care products can be used safely and effectively. This online class is primarily self-paced with due dates for certain aspects at times throughout the semester. Students may choose to work ahead in the course. Course information is sent to the U of M email addresses of registered students shortly before, and/or on, the first day of classes each Fall, Spring, and Summer term. For more information, contact phar1003@umn.edu or 612-624-7976.

PHAR 1004. Common Prescription Drugs and Diseases. (2 cr.; Student Option; Every Fall, Spring & Summer)
Are you interested in understanding how some of the most common prescription medications work, why they are used, and how they should be used when treating common ailments? Perhaps you would like to recognize the most common causes of specific diseases, identify their symptoms, and recognize the diagnostic criteria associated with them. Throughout this course, you will learn why some medications can’t be used by certain people, understand how prescription drugs are regulated, and examine the correlation between common prescription drugs and diseases. Additionally, you will explore various drug information resources and learn how to find reliable sources of drug information. This online class is primarily self-paced with due dates for certain aspects at times throughout the semester. Students may choose to work ahead in the course. Course information is sent to the U of M email addresses of registered students shortly before, and/or on, the first day of classes each Fall, Spring, and Summer term. For more information, contact phar1004@umn.edu or 612-624-7976.

PHAR 3206. Foundations of Health Literacy. (SOC SCI; 3 cr.; Student Option; Every Fall & Spring)
In this course, we will focus on health literacy and its implications for patients, health care providers, and the health care system at large. We will discuss the consequences of poor health literacy and practical strategies for improving health literacy. This will include steps that individual patients can take and...
communication strategies for future health care providers. You will explore disparities in health and health care and the relationship to health literacy. We will discuss cultural competency through both student discussions and a book club and consider the impact on the patient experience. Functional health literacy includes being able to navigate the health care system and health insurance. As a class, we will discuss choosing a health insurance policy and controversies therein.

PHAR 3208. Directed Study: Wellness Communication and Behavior Change in Patient Populations. (3 cr.; Student Option; Every Fall & Spring)
Health behavior change is key for the management of/and cure of preventable diseases. While most health care professionals try to encourage patients to make these changes, they are only occasionally successful. This course examines issues associated with behavior change and wellness in patient populations. The first part of the course examines theories and models of health education and individual behavior change. The second part of the class examines factors that impact health and habitual behavior. The third part of the class focuses on solutions -- creation health campaigns and patient compliance.

PHAR 3501. Introduction to Epidemiology. (3 cr.; A-F or Audit; Every Fall & Spring)
Introduction to epidemiology, the basic science of public health. Epidemiology provides a systematic approach for acquiring and evaluating information on the distribution and causes of disease and other health outcomes in populations. Topics include the history of epidemiology, overview of epidemiologic methods (e.g., study design, measure of disease distribution and association, interpretation), and the application of epidemiology research to the development and evaluation of disease prevention and control strategies. Current or historically relevant infectious and chronic disease will be explored through lecture, interactive exercise, and independent assignments. Students will gain a greater appreciation for the complexities of disease processes in populations and the application of epidemiological methods to clinical and basic science, population health, and public health policy. Prior or concurrent completion of an undergraduate statistics course is recommended, prerequisite: credit for an undergraduate statistics course is recommended but not required.

PHAR 3700. Fundamentals of Pharmacotherapy. (3 cr.; A-F only; Every Fall, Spring & Summer)
Pharmacotherapy?the treatment of disease through the administration of medications?is a field particularly interesting to many health care workers. This course is designed to introduce you to some of the main drug classes available for the treatment of particular diseases. You will also learn about basic pharmacology, recognize brand and generic drug names, and explore their common uses and therapeutic classes. A basic understanding of treatment options available for common disease states will also be developed during this course. Additionally, the course develops basic proficiency in the use of drug information resources. This is a completely online course with due dates throughout the semester though students have the option to work ahead if they choose. Course information is sent to the U of M email addresses of registered students shortly before, and/or on, the first day of classes each Fall, Spring, and Summer term. For more information, contact phar3700@umn.edu or 612-624-7976. Prerequisite: Medical terminology recommended

PHAR 4200. Drugs and the U.S. Healthcare System. (3 cr.; Student Option; Every Fall & Spring)
Being an empowered patient is important when discussing ethics-driven issues within the U.S. healthcare system. This course will expose students to current controversial issues surrounding medications and national healthcare, and help students examine their own role as a participant in this system. Students will learn to draw comparisons between medication use systems around the world and analyze other controversies related to access, choice and quality of healthcare. During this course, students will understand how their choices, ethics and behavior affect societal decisions surrounding the availability of medications in the US and their rights as a citizen-participant during the health care debate. This is a completely online course with weekly due dates offered each Fall and Spring term. For more information, contact phar4200@umn.edu or 612-624-7976.

PHAR 4201. Applied Medical Terminology. (2 cr.; Student Option; Every Fall, Spring & Summer)
This course will help students recognize medical abbreviations, relate terms to procedures and diagnostics, comprehend the meaning of medical terminology by using word elements, and apply medical terms in the context of patient care. Communication related to disease states, procedures, and diagnostics in health care can sometimes seem like another language. During this course, students will not only increase their medical vocabulary by more than 2500 words in a self-paced manner, they will also learn to identify and articulate describe a wide variety of medical conditions and processes. This is a completely online, self-paced course but runs on an accelerated 10-week schedule each Fall, Spring, and Summer term. For more information, contact phar4201@umn.edu or 612-624-7976. Prerequisite: Basic knowledge of human anatomy/physiology

PHAR 5100. Pro-Seminar. (1 cr.; A-F only; Every Fall & Spring & Summer)
Pacing of seminar discussions and coverage of material will vary depending on individual student needs and faculty interest.

PHAR 5200. Drugs and the U.S. Healthcare System. (3 cr.; Student Option; Every Fall & Spring)
Being an empowered patient is important when discussing ethics-driven issues within the U.S. healthcare system. This course will expose students to current controversial issues surrounding medications and national healthcare and help students examine their own role as a participant in this system. Students will learn to draw comparisons between medication use systems around the world and analyze other controversies related to access, choice, and quality of healthcare. During this course, students will understand how their choices, ethics and behavior affect societal decisions surrounding the availability of medications in the US and what their rights are as a citizen-participant during the health care debate. This is a completely online course with weekly due dates offered each Fall and Spring term. For more information, contact phar4200@umn.edu or 612-624-7976.

PHAR 5210. Applied Medical Terminology. (2 cr.; Student Option; Every Fall, Spring & Summer)
This course will help students recognize medical abbreviations, relate terms to procedures and diagnostics, comprehend the meaning of medical terminology by using word elements, and apply medical terms in the context of patient care. Communication related to disease states, procedures, and diagnostics in health care can sometimes seem like another language. During this course, students will not only increase their medical vocabulary by more than 2500 words in a self-paced manner, they will also learn to identify and articulate describe a wide variety of medical conditions and processes. This is a completely online, self-paced course but runs on an accelerated 10-week schedule each Fall, Spring, and Summer term. For more information, contact phar5201@umn.edu or 612-624-7976. Prerequisite: Basic knowledge of human anatomy/physiology

PHAR 5220. Regulatory Issues in Drug Research. (1-2 cr.; Student Option; Every Fall & Spring & Summer)
Performing research that involves the use of human beings and animals requires adherence to the regulation of the National Institutes of Health, Food and Drug Administration, and the sources of both federal and state funding. Knowledge of each of these organizations and the nature of the laws they represent is critical to working in the pharmaceutical research field.

PHAR 5250. Applied Medical Terminology. (2 cr.; Student Option; Every Fall, Spring & Summer)
This course will help students recognize medical abbreviations, relate terms to procedures and diagnostics, comprehend the meaning of medical terminology by using word elements, and apply medical terms in the context of patient care. Communication related to disease states, procedures, and diagnostics in health care can sometimes seem like another language. During this course, students will not only increase their medical vocabulary by more than 2500 words in a self-paced manner, they will also learn to identify and articulate describe a wide variety of medical conditions and processes. This is a completely online, self-paced course but runs on an accelerated 10-week schedule each Fall, Spring, and Summer term. For more information, contact phar5201@umn.edu or 612-624-7976. Prerequisite: Basic knowledge of human anatomy/physiology

PHAR 5205. Obesity: Issues, Interventions, Innovations. (2 cr.; Student Option; Every Fall & Spring)
This course will focus on the role of the pharmacist in treating obesity. Students will learn the pharmacology of past and current medications to treat obesity, as well as the pathophysiology of the disease to understand why more options aren’t available. Students will explore drug information sources for dietary supplements for weight loss, discuss the care of an obese patient including non-pharmacologic treatments for obesity, as well as recognizing the potential for bias and its effect on patient care. Finally, students will look at bariatric surgery and discuss some specific adjustments in care for bariatric patients. This is a completely online course with weekly due dates offered each Fall and Spring term. For more information, contact phar5205@umn.edu or 612-624-7976. Prerequisite: Second or third year pharmacy student, or student enrolled in a graduate science or health-related program. Biochemistry and physiology suggested.

PHAR 5220. Regulatory Issues in Drug Research. (1-2 cr.; Student Option; Every Fall)
Regulatory issues encountered in conducting drug research trials. Performing different aspects of clinical trials. Lectures, readings, small group discussions, homework assignments. Prerequisite: Pharm D. professional student and instructor consent
PHAR 5230. Principles of Clinical Pharmacology Research. (2 cr.; A-F only; Every Fall)
Topics related to drug therapy investigation are emphasized. Topics include experimental design of drug studies in human research subject volunteers (e.g. to learn appropriate dose, interval, drug-drug interactions, etc.). In the era of Personalized Medicine, this course will address topics related to individualization of therapy including effects of genetic polymorphisms, demographic variables, physiologic variables, and age on drug disposition treatment outcomes. prereq: 3rd Year Pharmacy Student or by instructor permission

PHAR 5270. Therapeutics of Herbal and Other Natural Medicinals. (2 cr.; A-F or Audit; Every Spring)
Herbal products/supplements. Pharmacology, clinical indications, and drug interactions of most commonly used products in nontraditional complementary health care. Historical significance and evidenced-based role of these products in health care. Case studies of clinical applications. prereq: Organic chemistry, pathophysiology of disease states, 3rd or 4th yr pharmacy student

PHAR 5300. Directed Study: Providing Care to Patients with Addiction. (2 cr.; Student Option; Every Fall & Spring)
In this course students will analyze stereotypes of addiction and examine the differences between addiction of controlled prescription agents versus other agents. Students will learn origins of addiction and apply practical strategies in simulated scenarios.

PHAR 5610. Pharmacoepidemiology. (3 cr.; A-F only; Fall Odd Year)
Application of epidemiologic principles to study/use. Beneficial/adverse outcomes of drugs in human populations.

PHAR 5620. Drug Metabolism and Disposition. (3 cr.; A-F or Audit; Every Spring)
Oxidative/conjugative enzymes systems involved in human drug metabolism/disposition. Various in vitro models used to evaluate drug metabolism or chemical entity, pros/cons of each. Factors involved in conducting in vivo studies.

PHAR 5700. Applied Fundamentals of Pharmacotherapy. (3 cr.; A-F only; Every Fall, Spring & Summer)
Pharmacotherapy, the treatment of disease through the administration of medications, is a field particularly interesting to many health care workers. This course is designed to introduce students to some of the main drug classes available for the treatment of particular diseases. Students will also learn about basic pharmacology, recognize brand and generic drug names, and explore their common uses and therapeutic classes. A basic understanding of treatment options available for common disease states will also be developed during this course. Additionally, the course develops basic proficiency in the use of drug information resources. This is a completely online course with due dates throughout the semester, though students have the option to work ahead if they choose. This course is offered each Fall, Spring, and Summer term. For more information, contact phar3700@umn.edu or 612-624-7976. Prereq: Medical terminology recommended

PHAR 6122. Pharmacotherapy II: Patient-Centered Pathophysiologic Approach. (5 cr.; A-F only; Every Spring)
Pathopharmacotherapy of common cardiovascular, endocrine, and gastrointestinal disorders. prereq: 6121, concurrent 5101, 5102, 6121, 6123, 6154, 6163, 6173

PHAR 6123. Pharmacotherapy III: Patient-Centered Pathophysiologic Approach. (5 cr.; A-F only; Every Fall)
Pathopharmacotherapy of common neurologic, psychiatric, pulmonary, and genitourinary disorders. prereq: 5101, 5102, 6122, 6123, 6154, 6163, concurrent registration in 6175

PHAR 6124. Pharmacotherapy IV: Patient-Centered Pathophysiologic Approach. (5 cr.; A-F only; Every Spring)
Pathopharmacotherapy of common infectious diseases, oncologic and toxicologic disorders. prereq: 6121, 6122, 6123, 6154, 6163

PHAR 6131. Pharmacy and the Health Care System. (3 cr.; A-F only; Every Spring)
Delivery of pharmaceuticals and pharmacy services in the U.S. health care system, issues in hospital and community practice, characteristics of the pharmaceutical industry, economic and financial issues in delivering pharmaceutical services. prereq: Second year pharmacy student

PHAR 6133. Pharmacy Practice Management. (3 cr.; A-F only; Every Spring)
Principles of pharmacy management, including inventory control, purchasing, pricing, financial analysis, and personnel management. prereq: Third year pharmacy student

PHAR 6134. Law and Ethics in Pharmacy Practice. (3 cr.; A-F only; Every Spring)
Minnesota and federal laws, rules, regulations and court decisions affecting pharmacy practice. Moral and ethical considerations that affect and influence pharmacy practice.

PHAR 6135. Pharmacy Outcomes. (2 cr.; A-F only; Every Spring)
How to integrate knowledge of basic sciences, pharmacotherapy, pharmacy practice management, pharmaceutical care, written communication, literature evaluation, drug information retrieval, law/ethics, and pharmacoconomics to manage patients with multiple medical conditions. prereq: 6123, 6175

PHAR 6137. Ethics in Pharmacy Practice. (1 cr.; A-F only; Every Spring)
Theories of ethics, ethical analysis of practical ethical issues experienced by pharmacists. Relationship of ethical reasoning to public policy and law. Readings from peer-reviewed publications and popular media. Case studies. prereq: Pharmacy student 3rd yr

PHAR 6150. CoP Honors: Medicinal Chemistry Seminar. (1 cr. [max 2 cr.] A-F only; Every Fall & Spring)
Current topics in medicinal chemistry. prereq: instructor consent

PHAR 6155. Medicinal Agents II. (2 cr.; A-F only; Every Spring)
Chemical/biological properties and therapeutic uses of drugs affecting central nervous, endocrine, and intermediary metabolism systems. prereq: 6154, concurrent registration in 5102 and 6174

PHAR 6156. Medicinal Agents III. (4 cr.; A-F only; Every Fall)
Therapeutic properties and uses of antiviral, anti-inflective and antineoplastic agents. prereq: 6141, 6151, 6153

PHAR 6157. Human Nutrition and Drug Therapy. (3 cr.; A-F only; Every Spring)
Basic concepts of human nutrition and clinical application. prereq: 6152

PHAR 6158. Recombinant DNA-Derived Drugs. (1 cr.; A-F only; Every Spring)
Biotechnology as it related to basic/clinical pharmaceutical sciences. Emphasizes recombinant DNA techniques and preparation/use of biotechnology-derived agents in diagnosing/treating disease. prereq: 6151

PHAR 6160. CoP Honors: Experimental and Clinical Pharmacology Seminar. (1 cr.; A-F only; Every Fall & Spring)
Selected topics in experimental and clinical pharmacology. prereq: instructor consent

PHAR 6164. Biopharmaceutics. (3 cr.; A-F only; Every Fall)
Applied theory of dosage form design for optimal drug activity and bioavailability for all routes of drug administration. prereq: 6161, 6162, 6163

PHAR 6173. Pharmaceutical Care Skills III. (2 cr.; A-F only; Every Fall)
Integrating basic/clinical science curriculum in a lab setting.

PHAR 6174. Pharmaceutical Care Skills IV. (2 cr.; A-F only; Every Spring)
Basic/clinical science curriculum in lab setting. Longitudinal care in lab setting. prereq: 6122

PHAR 6175. Pharmaceutical Care Skills V. (2 cr.; A-F only; Every Fall)
Integrating basic and clinical science curriculum in a lab setting. prereq: 6111, 6112, 6171, 6172, 6173, 6174 or instructor consent

PHAR 6181. Pharm.D. Paper. (1 cr.; A-F only; Every Fall)
How to write a research paper. Students present research project plan. Professional behavior, patient confidentiality, universal precautions. prereq: Third year pharmacy student

PHAR 6182. Pharm.D. IV Seminar. (1 cr.; A-F only; Every Spring)
Students present thesis topics to peers and faculty evaluators. prereq: 4th yr pharmacy student, 6181

PHAR 6183. Pharm.D. IV Paper. (2 cr.; A-F only; Every Fall)
Final paper describing a hypothesis-driven research project, patient-care oriented project, management project, drug-usage evaluation,
PHAR 6219. Building a Pharmaceutical Practice. (2 cr.; A-F only; Every Spring) Initiating a pharmaceutical care practice. Building a personal practice plan. prereq: 2nd or 3rd year Pharmacy student

PHAR 6220. Pediatric Drug Therapy. (2 cr.; A-F only; Every Spring) Pathophysiology/therapeutics of disease states. Common issues encountered in providing pharmaceutical care to pediatric patients. prereq: 3rd or 4th yr pharmacy student

PHAR 6222. Advanced Pharmaceutical Compounding. (2 cr.; A-F only; Every Spring) Expands compounding skills beyond those gained in pharmaceutical care lab. prereq: 2nd or 3rd yr pharmacy student

PHAR 6223. Pharmacokinetics Research Seminar. (1 cr.; A-F only; Every Fall & Spring) Students critically evaluate literature in pharmacokinetics, pharmacodynamics, and drug metabolism. prereq: 6163 with a grade of "B" or better.

PHAR 6224. Pharmacogenomics: Genetic Basis for Variability in Drug Response. (2 cr.; A-F only; Every Spring) Theory/practice of pharmacogenomics. Principles of human genetics/genomics. Applications to scientific education, problems in drug therapy optimization, and patient care. prereq: 3rd year or later healthcare or related education program or equivalent experience, or instructor consent.

PHAR 6225. Diabetes Experience. (1 cr.; A-F only; Every Spring) Diabetes mellitus. Student presentations, hands-on learning. prereq: 2nd or 3rd yr Pharm student

PHAR 6226. Interprofessional Diabetes Experience. (2 cr.; A-F only; Every Spring) Diabetes mellitus through active, hands-on learning in interprofessional environment. Participate in week-long experience of living with diabetes. Online learning activities. prereq: 2nd year or later pharmacy student

PHAR 6227. Leading Adaptive Change. (2 cr.; S-N only; Every Fall) Hands-on experience leading a change initiative. Students create a vision for change, plan an approach, implement their plan, and evaluate outcomes. Project focuses on area of pharmacy practice or education.

PHAR 6230. Ambulatory PC Clinic. (2 cr.; Student Option; Every Spring) How to conduct pharmaceutical care assessments, for patients with actual drug-related needs, in a controlled clinic setting. prereq: Enrolled pharmacy student

PHAR 6231. Community Pharmacy Management. (2 cr.; A-F only; Every Spring) Management techniques needed in community pharmacy practice, with emphasis on marketing and service. prereq: 2nd or 3rd yr Pharmacy student

PHAR 6232. Health System Pharmacy Management. (2 cr.; A-F only; Every Spring) Management techniques needed in various institutional pharmacy settings. Integrating distributive and clinical components of institutional practice prereq: 2nd or 3rd yr pharmacy student

PHAR 6233. Drug Use Review and Management. (2 cr.; A-F only; Every Fall) Principles of drug use review in various health care settings. Optimizing quality, minimizing cost. prereq: 3rd year pharmacy student

PHAR 6235. Pharmaceutical Industry: Business and Policy. (2 cr.; A-F or Audit; Every Spring) Developing, manufacturing, distributing, economically evaluating, purchasing, managing, and ordering pharmaceuticals in health sector. Unique market characteristics, complex regulatory processes, rapid technological change, high expense growth, public policy issues.

PHAR 6236. Clinical and Pharmacy Management in Modern U.S. Health Care and Regulatory Landscape. (2 cr.; A-F only; Every Fall) This interactive course provides diverse introductory exposure to key non-traditional pharmacy topics within the broader, complex, and evolving U.S. healthcare and managed care landscape. Class entails expertise and critical evaluation of clinical and pharmacy management topics such as utilization & care management, formulary, clinical planning, HEOR, healthcare policy and strategy, clinical account management, specialty pharmacy, Medicare, benefits consulting, pharmaceutical industry, business issues in managed care, and clinical pharmacy leadership. Relevant regulatory topics such as drug development are included as complementary topics, time permitting.

PHAR 6237. Leading Change in Pharmacy I. (2 cr.; S-N only; Every Fall & Spring) Mini-curriculum. Focuses on leadership development and its relation to advancing the profession of pharmacy. prereq: 2nd or 3rd yr Pharmacy student

PHAR 6238. Leading Change in Pharmacy II. (2 cr.; S-N only; Every Spring) Mini-curriculum. Focuses on leadership development and its relation to advancing the profession of pharmacy.

PHAR 6249. Addiction Medicine, Substance Abuse, and Chemical Dependency. (2 cr.; A-F or Audit; Every Spring) Addiction, chemical abuse, and chemical dependency. How pharmacists can impact those affected. prereq: 2nd or 3rd yr Pharmacy student

PHAR 6250. CoP Honors: Social and Administrative Pharmacy Seminar. (1 cr. [max 2 cr.]; A-F only; Every Fall & Spring) Current topics in hospital pharmacy prereq: instructor consent

PHAR 6260. CoP Honors: Pharmaceutics Seminar. (1 cr.; A-F or Audit; Every Fall & Spring) Contemporary topics in pharmaceutics research. prereq: instructor consent
PHAR 6293. Directed Research I. (1-5 cr. [max 10 cr.]; Student Option; Every Fall, Spring & Summer) Directed research in pharmacy practice, pharmaceutics, medicinal chemistry, or experimental and clinical pharmacology. prereq: Instructor consent

PHAR 6294. Directed Study I. (1-5 cr.; Student Option; Every Fall, Spring & Summer) Directed studies in pharmacy practice, pharmaceutics, medicinal chemistry, and experimental or clinical pharmacology.

PHAR 6301. Veterinary Pharmacotherapy. (2 cr.; A-F only; Every Spring) For students to gain knowledge concerning pharmacotherapy of common medical conditions of small animals. prereq: 3rd year pharmacy student

PHAR 6393. Directed Research II. (1-5 cr. [max 10 cr.]; Student Option; Every Fall, Spring & Summer) Directed research in pharmacy practice, pharmaceutics, medicinal chemistry, or experimental and clinical pharmacology. prereq: Instructor consent

PHAR 6394. Directed Study II. (1-5 cr.; A-F or Audit; Every Fall, Spring & Summer) Directed studies in pharmacy practice, pharmaceutics, medicinal chemistry, and experimental or clinical pharmacology.

PHAR 6493. Directed Research III. (1-5 cr. [max 10 cr.]; Student Option; Every Fall, Spring & Summer) Directed research in pharmacy practice, pharmaceutics, medicinal chemistry, or experimental and clinical pharmacology. prereq: Instructor consent

PHAR 6494. Directed Study III. (1-5 cr.; S-N or Audit; Every Fall, Spring & Summer) Directed studies in pharmacy, pharmaceutics, medicinal chemistry, and experimental or clinical pharmacology.

PHAR 6700. Becoming a Pharmacist. (2 cr.; S-N only; Every Fall) This course provides an introduction to the knowledge, skills and attitudes necessary for success in the professional pharmacy curriculum and in the practice of pharmacy, and will serve as a foundation for future learning throughout your career as a pharmacist. In this class, you will prepare for becoming a student for life. You will be introduced to the tools necessary to thrive in the university student environment, as well as to the essential PharmD curriculum components, referred to as domain competencies, to grow as a professional in a global environment focusing on patient centered care.

PHAR 6701. CoP Community Outreach. (0 cr.; No Grade Associated; Every Fall, Spring & Summer) Teaching laboratories to community-clinic-based interprofessional patient care model. Prereq: Current Student Pharmacist in the College of Pharmacy

PHAR 6702. Integrated Biochemical Sciences. (4.5 cr.; A-F only; Every Fall) This course is designed to provide students with a strong foundation in the structure and function of medicinals which is a prerequisite for advanced studies in pharmacy. The basic goals are to familiarize the students to the structural and physical properties of proteins, nucleic acids, lipids and carbohydrates, as well as ligands/drugs that bind to these macromolecules in an effort to understand the functional role each plays in the biochemistry of medicinals and the normal and abnormal functioning of a cell. A particular emphasis is placed on the basic concepts that are central to structure-function relationships of therapeutics. Macromolecular classes are presented progressively from basic monomeric structural composition and structural diversity to macromolecular assemblies and associated intrinsic function to macromolecular involvement in cellular architecture and cellular processes to molecular pathology with specific examples. prereq: Successful completion of Becoming a Pharmacist (BaP)

PHAR 6704. Foundations of Social and Administrative Pharmacy. (2.5 cr.; A-F only; Every Fall) Foundations of Social and Administrative Pharmacy (SAPh) provides the foundation for how one should think about rational use of drugs in a system of care. Content and skills learned in this course will be applied in subsequent courses continuing through the 4th year of the curriculum and lifelong into practice. Additionally, this course includes a module focused on Drug Literature Evaluation (DLE). prereq: Successful completion of Becoming a Pharmacist (BaP)

PHAR 6706. Foundations of Pharmaceutical Care. (1.5 cr.; A-F only; Every Fall) Foundations of Pharmaceutical Care lays the groundwork for how a pharmacist should think about the rational use of drugs in caring for patients. Content and skills learned in this course will be applied in and provide a framework for all subsequent courses continuing through the 4th year of the curriculum and lifelong into practice.

PHAR 6708. Drug Delivery I. (2.5 cr.; A-F only; Every Fall) In this course, a systematic approach establishes the fundamental physicochemical principles applicable to dosage forms. The foundational scientific principles (continued in DDII) are illuminated with key examples of solution drug dosage forms. These concepts are relevant to current as well as future dosage forms as drugs must be dissolved in a solution before they can be absorbed into the systemic circulation and eventually the site of action. prereq: Successful completion of Becoming a Pharmacist (BaP)

PHAR 6710. Pharmaceutical Care Skills Lab I. (2 cr.; S-N only; Every Fall) This course is designed for first year pharmacy students to provide an introduction to the profession and begin building the skills necessary to become a competent, caring pharmaceutical care practitioner. The course consists of two components: a laboratory section and a lecture. prereq: Successful completion of Becoming a Pharmacist (BaP)

PHAR 6715. Professional Development and Assessment Sequence I. (1 cr.; A-F only; Every Spring) During the first year of the Professional Development and Assessment Sequence, the emphasis will be on knowledge acquisition and student success in both the curriculum and profession. The class will include work in career and professional development. prereq: Successful completion of Becoming a Pharmacist

PHAR 6716. Applied Pharmaceutical Care. (3.2 cr.; A-F only; Every Spring) Evidence-based patient-centered pharmaceutical care involves assessing patients’ drug-related needs, identifying, resolving, and preventing drug therapy problems, developing a care plan for follow up, and communicating with a patient and the health care team. These concepts will be applied to patient and population scenarios featuring common medical conditions and medications students are likely to encounter during their introductory pharmacy practice experiences (IPPEs). prereq: Successful completion of Becoming a Pharmacist

PHAR 6718. Drug Delivery II. (2.4 cr.; A-F only; Every Spring) Building on Drug Delivery I, this course covers other dosage forms (mostly solid and dispersed dosage forms) as well as to differentiate between them. New areas covered include chemical kinetics, chemical stability, buffer systems, polymers & proteins, and rheology. The course will introduce students to the physiochemical principles that are relevant to design, preparation, storage, use, efficacy, and evaluation of pharmaceutical dosage forms. prereq: Successful completion of Drug Delivery I

PHAR 6720. Pharmaceutical Care Skills Lab II. (2 cr.; A-F only; Every Spring) This course is part of the pharmaceutical care learning center curriculum spanning six semesters. These courses provide an introduction to the profession and build the skills necessary to become a competent and caring pharmaceutical care practitioner. prereq: Successful completion of Pharmaceutical Care Skills Lab I

PHAR 6722. Principles of Medicinal Chemistry. (2.1 cr.; A-F only; Every Spring) This is an introductory course that will familiarize students with the discipline of medicinal chemistry, the principles of drug design and drug metabolism. prereq: Successful completion of Integrated Biochemical Sciences

PHAR 6724. Introduction to the Immune System and Infectious Disease. (3.1 cr.; A-F only; Every Spring) This course focuses on the immunological, epidemiological, and pathogenic basis of viral, bacterial, protozoal, fungal and helminthic disease; the biological composition of vaccines and the immunologic response
to live attenuated pathogens and microbial extracts; the chemical, cellular, and biological principles of the immune system; the biological and molecular response to allergens and hypersensitivity; and an introduction to cellular and molecular aspects of inflammation.

PHAR 6726. Principles of Pharmacology. (2.3 cr. ; A-F only; Every Spring)
This is an introductory course that builds on information in basic science courses offered in the first semester of the PharmD program. It provides foundational content necessary for comprehension and application of all subsequent pharmacotherapy modules that require application of pharmacological concepts and knowledge. prereq: Successful completion of Foundations of SApH

PHAR 6728. Pharmaceutical Calculations. (0.7 cr. ; A-F only; Every Fall)
Accurately performing pharmaceutical calculations is a critical component of patient care in every pharmacy practice environment. Calculations contribute just as much to good patient outcomes as the newest methods and guidelines for diagnosis, treatment, and prevention. The challenge of pharmacy calculations lies not in the cutting edge of science or their mathematical complexity, but in the need for consistent accuracy to prevent patient harm and possible fatality. To obtain this level of accuracy, an understanding of methods and deliberate, undivided attention to detail is required. Students must understand and master the basic concepts of pharmaceutical calculations with organization, consistency and accuracy in order to provide optimal care to their future patients every day. Students should be committed to becoming a competent generalist practitioner who assumes responsibility, and is willing to be held accountable for their patients’ medication outcomes. prereq: enrolled in the Pharm.D. program, successful completion of Phar 6700

PHAR 6730. Career and Professional Foundations II. (0.5 cr. ; S-N only; Every Fall)
For the second year of the Career and Professional Foundations Sequence, the emphasis will be on reinforcing, supporting, developing and assessing competencies and skills that are exercised in multiple courses and emphasized in the College???s competency domains e.g. team effectiveness. This class will also include work in career and professional development, prereq: Successful completion of PD Concurrent registration is required (or allowed) in A 1

PHAR 6732. Medicinal Chemistry and Pharmacology of Cardiovascular Agents. (2.3 cr. ; A-F only; Every Fall)
This course builds upon the foundational concepts learned in Principles of Pharmacology and Principles of Medicinal Chemistry and applies them to drug classes primarily used for the treatment of cardiovascular diseases. prereq: Principles of Pharmacology and Principles of Medicinal Chemistry

PHAR 6734. Cellular Metabolism and Nutrition. (2.8 cr. ; A-F only; Every Fall)
This course is designed to provide students with an understanding of the basic principles of intermediary metabolism and how such processes are used by the body for growth, production of energy and disposition of metabolites. The course also addresses the basic nutrients used by the body and their roles as OTC products in community pharmacies. prereq: Integrated Biochemical Sciences

PHAR 6736. Cardiovascular Pharmacotherapy. (1.9 cr. ; A-F only; Every Fall)
Cardiovascular disease represents the number one cause of morbidity and mortality for adults in the U.S. The key topics covered in this course are critical to preparing a generalist practitioner to have input on optimizing the care of patients with common conditions such as hypertension, dyslipidemia, ischemic heart disease (angina, acute myocardial infarction) supraventricular arrhythmias (atrial fibrillation) and chronic heart failure. prereq: All PharmD year one coursework, Physiology Competency Exam

PHAR 6738. Pharmacokinetics. (3.7 cr. ; A-F only; Every Fall)
This course is designed to give generalist practitioners the fundamental skills to solve pharmacokinetically-based problems in patient care, particularly in regards to dosage regimen design and adjustment. Pharmacokinetics builds on the concepts learned in Drug Delivery I and II, and follows the path of a drug molecule from its incorporation into a dosage form to its release and disposition in a biological system. prereq: Drug Delivery I concurrent registration is required (or allowed) in II

PHAR 6740. Pharmaceutical Care Skills Lab III. (2 cr. ; S-N only; Every Fall)
This course is designed for second year pharmacy students to continue to build the skills necessary to become a competent, caring pharmaceutical care practitioner. The course consists of two components: a laboratory section and a discussion. prereq: Pharmaceutical Care Skills Lab I and II, and follows the path of a drug molecule from its incorporation into a dosage form to its release and disposition in a biological system. prereq: Drug Delivery I concurrent registration is required (or allowed) in II, Applied Pharmaceutical Care

PHAR 6742. Evidence based problem analysis I. (1 cr. ; S-N only; Every Spring)
In this course, students will obtain and practice the skills necessary to research, prepare and present a scholarly paper and seminar. The course builds on the Biostatistics and Drug Literature Evaluation material from Becoming a Pharmacist, Foundations of Social and Administrative Pharmacy, and Foundations of Pharmaceutical Care. The course relies heavily on group work; prereq: Becoming a Pharmacist, Foundations of Social and Administrative Pharmacy, Foundations of Pharmaceutical Care

PHAR 6745. Professional Development and Assessment III. (0.5 cr. ; A-F only; Every Spring)
For the second year of the Professional Development and Assessment Sequence, the emphasis will be on knowledge comprehension. This class will include work in career and professional development.

PHAR 6748. Biopharmaceutics. (2.6 cr. ; A-F only; Every Spring)
Biopharmaceutics is the final course in a four-course sequence that comprises the curriculum in pharmaceutics. Biopharmaceutics integrates core knowledge obtained in the previous three courses (Drug Delivery I & II and Pharmacokinetics), and also relies on general knowledge in anatomy, physiology, mathematics, general chemistry, and pharmacology. prereq: Courses and/or content: Calculus, thermodynamics, viscosity, sedimentation, diffusion, chemical kinetics, novice to developing level understanding of dosage forms, developing understanding of pharmacokinetics/ pharmacodynamics, physiology, general chemistry, physics, biochemistry, enzyme kinetics, and metabolic pathways. It is strongly recommended that students review course materials in Drug Delivery I concurrent registration is required (or allowed) in II and Pharmacokinetics as well as anatomy, physiology, calculus, and physics with consideration of the application of the concepts to the delivery of drugs to patients.

PHAR 6750. Pharmaceutical Care Skills Lab 4. (2 cr. ; A-F only; Every Spring)
This course is designed for second year pharmacy students to continue to build the skills necessary to become a competent, caring pharmaceutical care practitioner. prereq: Students must have successfully completed Pharm Care Skills 1, 2, and 3, and Applied Pharmaceutical Care. Students must be concomitantly registered in all required PD2 courses in order to have the content required to complete integrated activities, e.g., students must be enrolled in Diabetes in order to successfully complete the patient care sequence utilizing diabetes content in this course. Exceptions may be made on a case by case basis. Topic areas from prerequisites and corequisites: documentation and care plans, subject matter (GI, pain, cardiovascular, diabetes), medication history taking skills, aseptic technique, philosophy of pharmaceutical care, literature evaluation skills, motivational interviewing skills, pharmacy calculations, drug delivery.

PHAR 6752. Integrated Endocrinology. (2.1 cr. ; A-F only; Every Spring)
This course integrates all pertinent endocrinology topics (excluding diabetes) into one course. Specifically, the pathophysiology, medicinal chemistry, pharmacology and the therapeutic application of this knowledge will be covered in an integrated approach via specific modules. All major endocrine pathways will be taught including: hypothalamic/pituitary, steroids, female sex hormones, hormonal contraception, menopause/hormone therapy, bone health, male gonadal hormones, drugs in pregnancy and lactation, sexual dysfunction and thyroid hormone, prereq: Students will need to have successfully completed: Cellular Metabolism/Nutrition, - Cardiovascular Pharmacotherapy - Pharmaceutical Care Skills Labs 1-3. Students should be concurrently enrolled in Kidney, Fluids, and Electrolytes, and Diabetes and Metabolic Syndrome. Students should be able to describe the function of the
overendocrine systems and the multiple roles of hormones in the body.

**PHAR 6754. Diabetes and Metabolic Syndrome.** (2.1 cr.; A-F only; Every Spring)
In this course, students will learn the principles of the pathophysiology of diabetes, pharmacology of the antidiabetic agents, evaluate key research on diabetes, interpret and apply clinical guidelines for diabetes, assess socioeconomic aspects of diabetes, and apply the information to patient cases. Special populations with diabetes will also be discussed including pediatric, gestational, and geriatric diabetes. Students will also learn the pathophysiology of metabolic syndrome, pharmacology of obesity treatments, nonpharmacological and pharmacological ways to treat metabolic syndrome, including the implications of bariatric surgery on use of pharmacologic agents in general, and apply this information to patient cases. prereq: Students will need to have successfully completed: Molecular Metabolism/Nutrition, Cardiovascular Pharmacotherapy concurrent registration is required (or allowed) in Pharmaceutical Care Skills Lab 1-3. Students should be able to describe the physiology of insulin action, incretin hormones, amylin, and the fasting and fed states. Students should be able to describe how insulin is designed and manufactured. Students should be able to describe the following biochemical topics: carbohydrate metabolism and lipid metabolism, and protein. Students should be able to assess a patient and determine most appropriate pharmacotherapy treatment options for a patient's hypertension and dyslipidemia treatments, including ability to describe, interpret and apply evidence-based guidelines. Students should be able to describe how nutrition impacts energy production, utilization and storage, and obesity. Students need to be able to describe the caloric content of carbohydrates, proteins and lipids and be able to apply that knowledge to reading food labels and evaluating a patient's nutritional status.

**PHAR 6756. Kidney, Fluid, and Electrolytes.** (2.1 cr.; A-F only; Every Spring)
In this course, students will learn key concepts and develop specific skills in the management of common fluid and electrolyte and single acid/base disorders and in prevention and management of chronic kidney disease and associated conditions. prereq: Students must have completed the following courses successfully: - Applied Pharmaceutical Care - Foundations of Social and Administrative Pharmacy - Medicinal Chemistry and Pharmacology of Cardiovascular Agents - Pharmacokinetics - Cardiovascular Pharmacotherapy - Cellular Metabolism and Nutrition See the course syllabus for more detailed prerequisites.

**PHAR 6760. Career and Professional Foundations IV.** (0.5 cr.; S-N only; Every Fall)
For the third year of the Career and Professional Foundations sequence, the emphasis will be on deeper exploration into career options, as well as the tools needed for contemporary pharmacy practice. Students will have the opportunity to engage with their peers as well as practicing pharmacists as they learn about the expectations of contemporary professional practice. prereq: PHAR 6715, 6730, 6745

**PHAR 6762. Medicinal Chemistry and Neuropharmacology.** (2.8 cr.; A-F only; Every Fall)
Neuropharmacology and Medicinal Chemistry of Neurotological Treatments builds upon the foundational concepts learned in Principles of Pharmacology and Principles of Medicinal Chemistry, and applies them to drug classes primarily used for the treatment of central nervous system (CNS) and peripheral nervous system (PNS) dysfunction. prereq: PHAR 6722, 6726, and 6732

**PHAR 6766. Biotechnology-Derived Drugs.** (1 cr.; A-F only; Every Fall)
Biotechnology-derived drugs are where the future is, and pharmacy students need to understand how they are made, how they act and what special considerations are involved. This course will provide the foundational knowledge necessary to dispense current biotechnology-derived drugs and provide the basis for self-education needed to understand the biotechnology-derived drugs of the future. prereq: PHAR 6702, 6722, 6726, 6724, 6734, and 6752

**PHAR 6768. Infectious Diseases.** (3 cr.; A-F only; Every Fall)
Course will focus on the pharmacology, pharmacokinetics, and pharmacodynamics of antibiotics and the pharmacotherapy of infectious diseases. prereq: PHAR 6702, 6706, 6718, 6724, 6736, 6738, 6748, 6756, 6758

**PHAR 6770. Pharmaceutical Care Skills Lab V.** (2 cr.; S-N only; Every Fall)
This course is designed for third year pharmacy students to continue to build the skills necessary to become a competent, caring pharmaceutical care practitioner. The course consists of two components: a laboratory section and a discussion. prereq: Pharmaceutical Care Skills Labs I, II, III, and IV, and Applied Pharmaceutical Care

**PHAR 6772. Topics in Pharmacotherapy.** (1.6 cr.; A-F only; Every Fall)
This course is designed to provide students with the pharmacologic, pharmacotherapeutic, and pharmaceutics knowledge they need to understand therapies for dermatologic, gastrointestinal, and genitourinary conditions, and arthritis and gout. It is designed to prepare future generalist pharmacists to be knowledgeable about common conditions of aforementioned topics and appropriate pharmacotherapy options for treatment. It will focus primarily on pharmacotherapy, but will have an overview of pathophysiology of these conditions. Students will be expected to apply knowledge to design and monitor a patient-centered pharmaceutical care plan and to appropriately educate patients regarding proper use of medications covered in the course. This course prepares students to be able to identify clinically relevant information in the modern healthcare setting, learn it at a depth beyond memorization, and apply and interpret its application to relevant patient case vignettes. prereq: All required PharmD year two coursework

**PHAR 6774. Pharmacotherapy of Neurologic and Psychiatric Disorders.** (3.1 cr.; A-F only; Every Fall)
This course is designed to prepare future generalist pharmacists to be knowledgeable about common psychiatric and neurologic disorders and about the appropriate use of medications used to treat them. The course will primarily focus on the pharmacotherapies used to treat psychiatric and neurologic disorders. This course will additionally provide an overview of the presentation and pathophysiology of specific psychiatric and neurologic disorders, an overview of the differences between the practices of psychiatry and neurology and a discussion of stigmas associated with mental illness. An overview of non-pharmacologic therapies will be introduced to the extent relevant to the generalist pharmacists. At the conclusion of the course students will be expected to apply knowledge learned in the course in order to design and monitor a pharmacotherapeutic plan for specific patients and to appropriately counsel patients regarding proper use of the various psychiatric and neurologic medications covered in the course. prereq: All required PharmD year two coursework

**PHAR 6778. Pharmacy Law.** (0.7 cr.; A-F only; Every Spring)
The course covers both federal and state laws that impact and regulate the practice of pharmacy including federal regulation of medications, regulation of controlled substances, and the Minnesota Pharmacy Practice Act. The course will be offered entirely online.

**PHAR 6780. Pharmacy Outcomes.** (2.5 cr.; A-F only; Every Spring)
The goal of this course is to facilitate integration knowledge of basic sciences, pharmacotherapy, pharmacy practice management, pharmaceutical care, written communication, literature evaluation, drug information retrieval, law and ethics, and pharmacoconomics to manage patients with multiple medical conditions. This course is where students are required to perform and demonstrate knowledge during curricular assessments. prereq: PHAR 6700, 6702, 6704,
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.

6706, 6708, 6710, 7310, 6716, 6718, 6720, 6722, 6724, 6726, 7235, 6732, 6734, 6736, 6738, 6740, 6742, 7300, 6748, 6750, 6752, 6754, 6756, 6758, 7340, 6745, 6770, 6774, 6768, 6762

PHAR 6782. Evidence Based Problem Analysis II. (0.8 cr.; S-N only; Every Fall)

Third year Pharm.D. students practice skills necessary to provide peer review and prepare written and oral presentations of inquiries / investigations to peers.. prerequisite: Phar 6760, 6704, 6706, 6742

PHAR 6784. Integrated Oncology. (2.8 cr.; A-F only; Every Spring)

This course focuses on the etiology and molecular biology of tumorigenesis, medicinal agents, and pharmacology of anticancer agents, treatment of the most common cancers, supportive care of the patient with cancer, and social and ethical considerations of the treatment of the patient with cancer including end of life directives. prerequisite: PD3 in good academic standing, students will find it helpful to have the following topics: Principles of Biochemistry (Lipids, Structure/Function), Proteins (Folding/Conformation), Cellular Physiology Molecular Biology, Genetics (Cell Biology [signal transduction, DNA replication, transcription, protein translation, cell cycle, apoptosis], Immunology, Tumorigenesis, Angiogenesis, Genetics principles, Anatomy/Physiology [GI tract, pulmonary, hormone and feedback regulation])

PHAR 6786. Acute Patient Care Pharmacotherapy. (3.4 cr.; A-F only; Every Spring)

The purpose of this course is to prepare students to approach patients with multiple medical problems and the dynamic changes that patients can experience in the acute care settings. Students will then learn about the pharmacotherapy approach related to managing those disease states/conditions. Students will be expected to develop therapeutic plans for patient case scenarios at the onset of a hospital admission as well as additional problem that could present over the course of a hospitalization or result in readmission. Additional scenario problems will be incorporated into the cases as the course progresses and the cases and problems will become more complex. By the end of the course, students will have had an opportunity to address multiple medical problems and make pharmacotherapy decisions and will be evaluated based on those decisions. Knowledge gained in this course will prepare students for the APPE acute care/institutional rotation, prerequisite: successful completion of all 1st year, 2nd year, and fall 3rd year coursework

PHAR 6799. Being a Pharmacist. (0.1 cr.; S-N only; Every Spring)

The Pharm.D. curriculum at the University of Minnesota is anchored by the basic, clinical, and social sciences relevant to the practice of pharmacy. This course serves as a culmination of academic and intellectual expression of the basic, clinical, and social pharmaceutical sciences and connects them to pharmacy practice. Future growth in knowledge and skill of our graduates/practitioners will predominantly occur through collegial exchange and conference-based learning environments. Being A Pharmacist will model how our students will continue to grow in knowledge and skill as they enter practice. In this course, students will be encouraged to think critically, reflect, and apply their skills. Prerequisite: Successful completion of all courses in the PharmD rotation, with the exception of the final APPE rotation.

PHAR 6900. Curricular Studies for Internship and Pharmacy Employment. (1 cr. [max 4 cr.]; S-N only; Every Fall, Spring & Summer)

This course is designed for students pursuing an internship or pharmacy-related employment to receive course credit (typically for visa requirements). The course does NOT count toward elective credit requirements. If applicable, students must remain visa compliant and are solely responsible for doing so. The vast majority of the course is the hours a student spends at their internship/employment site. A written assignment is required at the end of the course. Students will meet once during the semester, arranged with instructors.

PHAR 6901. Pharmaceutical Care Experience. (1 cr.; S-N only; Every Spring)

The Pharmaceutical Care Experience builds on Foundations of Pharmaceutical Care and provides an early opportunity to practice pharmaceutical care in a primary care clinic setting. This elective will allow students to assess each patient’s unique medication experience and drug-related needs through patient interviews. Students will use this information to develop a patient-centered care plan under the guidance of a practitioner mentor. The pharmaceutical care process will be applied and assessed in all future coursework, including, but not limited to, pharmacotherapy patient case work-ups, applied learning in the Pharmaceutical Care Learning Center, and during experiential education experiences

PHAR 6902. Foundations for Integrative Mental Health and Psychiatric Practice. (2 cr.; A-F only; Every Fall)

This course is designed to allow students to examine concept theories, and paradigms foundational to psychiatric/mental health practice and interprofessional integrative mental health care. Students develop clinical interviewing methods that elicit a client’s health narrative and facilitate the therapeutic relationship. Students also practice techniques that promote beginning skills important in reflective clinical practice. The course is primary online, with 3 hr patient care simulations. There will be content posted on the course website for student learning. Activities and assessments include quizzes, patient scenario cases, reflective papers (upon re-watching the video of their interactions with the interprofessional teams and standardized patients during the simulation sessions), and individual and interprofessional group. Pharmacy students need to be PD3 students committed to earning the Interprofessional Integrative Mental Health Focus Area designation. We ask pharmacy students to commit to the entire series (fall and spring electives, and mental health APPE)

PHAR 6903. Assessment and Management of Psychiatric Disorders. (2 cr.; A-F only; Every Spring)

This course is designed to allow students to apply advanced concepts from integrative mental health theory and research, social sciences, neuropsychology, and neuropsychology in the differentiation and explanation of psychiatric symptoms and disorders across the age continuum.

PHAR 6906. Introduction to Pharmacy Research. (1 cr.; A-F only; Every Spring)

Overview of principles to research in particular research topic areas. Forum for students involved in research in particular topic areas to discuss research, environment, careers with students. prerequisite: consent of course director

PHAR 6908. Drugs of Abuse. (2 cr.; S-N only; Spring Odd Year)

Basic medicinal chemistry of substances of abuse, associated paraphernalia. prerequisite: Organic Chemistry I and Phar 6702

PHAR 6913. The Science and Spirit of Wellbeing. (1 cr.; A-F only; Every Spring)

Care, in general, and healthcare in particular, requires a certain degree of wellbeing on the part of the provider. This elective survey course introduces students to evidence based wellbeing. The course explores individual wellbeing as well as implications for practice and the health and wellbeing of others. prerequisite: instr consent

PHAR 6937. Foundations of Leadership. (2 cr.; A-F only; Every Fall & Spring)

The Foundations of Leadership course is designed as a “mini - curriculum” focused on leadership development and its relation to advancing the profession of pharmacy. prerequisite: PDII or PDIII Pharmacy Student

PHAR 6938. Developing Adaptive Leadership. (1 cr.; A-F only; Every Spring)

Directed Study: Developing Adaptive Leadership prerequisite: Pharm.D. student; successful completion of Phar 6937

PHAR 6939. Directed Study: Leading Change Experience I. (2 cr.; S-N only; Every Fall)

In collaboration with a faculty advisor, students implement a change that requires adaptive leadership. Work will focus on building a “short term win” and a team that can continue efforts into the future. Students will also gain experience in collecting and managing data to assist the change process (e.g., needs assessment and/or outcomes assessment). In addition, working with their faculty advisor, students will create and implement an individualized plan for their own personal leadership development. Students will also gain experience in supporting the leadership development of others. To support
individualized development, a leadership networking partner (pharmacist) is assigned and periodic networking events and/or meetings are held; prerequisite: PHAR 6937 and 6938

PHAR 6939. Leading Change Experience I. (2 cr.; S-N only; Every Fall) In collaboration with a faculty advisor, students implement a change that requires adaptive leadership. Work will focus on building a “short term win” and a team that can continue efforts into the future. Students will also gain experience in collecting and managing data to assist the change process (e.g., needs assessment and/or outcomes assessment). In addition, working with their faculty advisor, students will create and implement an individualized plan for their own personal leadership development. Students will also gain experience in supporting the leadership development of others. To support individualized development, a leadership networking partner (pharmacist) is assigned and periodic networking events and/or meetings are held; prerequisite: PHAR 6937 and 6938

PHAR 6940. Leading Change Experience II. (2 cr.; S-N only; Every Spring) Continues leading change and development work initiated in Leading Change Experience I. During this term, students continue with their networking partners, present their leading change work, facilitate transition of the work to new leaders, conduct a critical appraisal of their leadership development and support second year students as they initiate their projects. Students will also evolve their roles into shifting from personal development to the development of others. Assisting in a mentoring role in several capacities 1) transitioning new leaders into the leading change experience and 2) providing guidance, ideas and encouragement to those students interested in change initiatives. Prerequisite: PHAR 6937 and 6938

PHAR 6941. Leadership Best Sellers for Pharmacists. (2 cr.; A-F only; Every Fall & Spring) Part of the leadership track in pharmacy.

PHAR 6942. Leadership Capstone. (2 cr.; S-N only; Every Fall, Spring & Summer) Supports completion of Leadership Emphasis Designation. Documentation/self-reflection of leadership learning experiences pursued inside/outside of classroom. Prerequisites: This course is for students who are in the fourth year of the Leadership Emphasis Area. Successful completion of PHAR 6937, 6938, 6939 and 6940. Completion or concurrent enrollment in 6941 (Leadership Best Sellers).

PHAR 6961. Women's Health. (2 cr.; A-F or Audit; Every Spring) During this course, students will have the opportunity to actively learn and discuss women's health issues taught in the core curriculum to a greater extent. The core curriculum focuses on the pharmacotherapy around women's health, we will focus on the patient's perspective, pathophysiology, and other quality care considerations specific to women including cultural, religious, psychosocial, and socioeconomic factors effecting health. Health topics will range from social issues to menstrual health, breast cancer to eating disorders, with a specific focus on preparing students for professional practice and the pharmacist's role. Prerequisite: Endocrinology pharmacotherapy sequence in the PD2 year; prerequisite topics: Contraceptive agents, emergency contraception, hormonal contraception

PHAR 6962. Ethics in Pharmacy Practice. (2 cr.; A-F only; Every Spring) Ethical principles, selected schools of ethical thought. Students discuss/debate ethical dilemmas in pharmacy practice and health care. Prerequisite: 3rd year Pharmacy student

PHAR 6964. Clinical Toxicology. (1 cr.; A-F only; Every Spring) This course will cover the clinical signs/symptoms, general management and treatment of poisonings and toxicologic emergencies that are not covered in the main curriculum. It will also cover decontamination and laboratory principles associated with poisonings and toxicologic emergencies. This class will be comprised of lecture format presentations. Students will be given 1 hour to complete the final exam and midterm. Prerequisites: All students will have successfully completed the first year professional pharmacy program, as well as successfully completed fall semester of the second year. All students will have also successfully completed or be in the process of completing anatomy, physiology, pathophysiology, and pharmacology. The student is responsible for this material to the extent necessary as a framework for toxicologic therapeutics. Thus, students are encouraged to review basic anatomy and physiology and specifically encouraged to review the section of the pharmacology textbook relevant to the classes of drugs covered.

PHAR 6966. Food Medicine: Contemporary Issues. (1 cr.; Student Option No Audit; Every Fall & Spring) Food contributes to the prevention, and conversely, the development of disease processes. In order to better understand the interrelatedness of food and health, this course offers a critical perspective on how the ubiquity of food; race, class, gender; and indigeneity; colonization and corporatization affect people's food experiences; and subsequently, individual and population health. Students will examine modern food systems and describe implications for social determinants of health, health promotion, chronic disease management and IP collaborative practice. We will address questions such as: How do food systems impact our health? What makes food a political and environmental issue? Are we what we eat? Why do we categorize things that are not food as food? What is food sovereignty?

PHAR 6968. Critical Care. (1 cr.; A-F only; Every Spring) Critical Care is an elective that consists of 2 main components, a faculty/clinician presentation on an important topic to contemporary critical care practice followed by a student evaluation and presentation on a selected primary literature topic that applies and integrates the presentation with current practice challenges. Key topics that are covered include discussion of the Surviving Sepsis Guidelines with discussion on the role of corticosteroids, identification and management of the anxious or delirious ICU patient and application of the updated PAD guidelines, systems of The second 50-minute a student (or pair of students) present the faculty-selected study using PowerPoint slides and encourage group discussion of the paper’s merits and application to current critical care practice or future research. Challenges of critical care research are incorporated into the weekly discussions. Prerequisite: Successful completion of P1, P2, and Fall of P3 professional pharmacy program. Interest in critical care pharmacy practice and/or clinical research.

PHAR 6971. Geriatric Pharmacotherapy. (2 cr.; A-F or Audit; Every Spring) Pharmacokinetic/pharmacodynamic changes and their implications in elders. Effects of drug-drug/drug-disease interactions. Drug adherence barriers to provide optimum pharmacotherapy to elderly persons. Prerequisite: 3rd or 4th year Pharmacy student

PHAR 7001. Early Pharmacy Practice Experience I. (1 cr.; A-F only; Every Fall) First in a series of four courses. Focuses on patient's perspective in managing and living with chronic conditions and chronic medication use. Includes community-based instruction, mentor program prerequisite: Criminal background check, BLS CPR cert for infants/children/adults, [proof of negative Mantoux test or explanation of positive test], proof of chicken pox immunity

PHAR 7002. Early Pharmacy Practice Experience II. (1 cr.; A-F only; Every Spring) Second in a series of four courses. Focuses on patient's perspective in managing and living with chronic conditions and chronic medication use. Includes community-based instruction, mentor program prerequisite: 7001 or instructor consent, criminal background check, BLS CPR cert, proof of negative Mantoux test or explanation of positive test, proof of chicken pox immunity

PHAR 7003. Early Pharmacy Practice Experience III. (0.5 cr.; A-F only; Every Fall) Third in a series of four courses. Focusing on patient's perspective in managing and living with chronic conditions and chronic medication use. Includes community-based instruction, emphasis on imaging, anticoagulation, etc. Prerequisite: 7002 or instructor consent, criminal background check, BLS CPR cert for infants/child/adults, [proof of negative Mantoux test or explanation of positive test], proof of chicken pox immunity

PHAR 7004. Early Pharmacy Practice Experience IV. (0.5 cr.; A-F only; Every Spring) Fourth in a series of four courses. Focuses on patient's perspective in managing and living with chronic conditions and chronic medication use. Includes community-based instruction. Emphasizes mentoring. Upcoming patient care opportunities. Prerequisite: 7003 or instructor
PHAR 7005. Introductory Community-Practice Pharmacy Experience. (2.5 cr.; S-N only; Every Spring)
Experience in patient care at community practice setting. Three weeks, 40 hrs/week. prereq: 6111, 6171, 7001, 1st-yr pharm student

PHAR 7006. Introductory Institutional-Pharmacy Practice Experience. (2.5 cr.; S-N only; Every Spring)
Experience in patient care in hospital setting. Three-week, 40 hours/week. prereq: College of Pharmacy student completed PHAR 6121, 6122, 6131, 6132, 6173, 6174, 7003 and 7004 with a passing grade and is registered with the Minnesota Board of Pharmacy as an intern.

PHAR 7010. APPE Continuing Professional Development Portfolio. (1.5 cr.; max 4.5 cr.; S-N only; Every Spring)
The International Pharmaceutical Federation has defined Continuing Professional Development (CPD), as the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers. Pharmacists must self-assess their performance and associated learning needs, followed by planning of learning, acting on those plans, and evaluating progress. Documentation of this process allows for peer review and support, along with regulatory review. prereq: 3rd year Pharmacy student

PHAR 7128. Acute Patient Care Practice Experience II. (4 cr.; A-F only; Every Fall, Spring & Summer)
Experience in an inpatient setting. Students are responsible for all drug-related needs of individuals. Fulfilled in five weeks. prereq: Pharm.D. I-III, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7213. Elective Practice Experience III. (4 cr.; A-F only; Every Fall, Spring & Summer)
Experience in inpatient or outpatient pharmacy practices where direct patient contact and care occurs for 5 weeks, -or- experience in a non-patient care setting, sites vary widely from governmental agencies to pharmacy associations to specialized practices for 5 weeks. prereq: Pharm.D. I-III, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7214. Elective Practice Experience IV. (4 cr.; A-F only; Every Fall & Spring)
Five weeks of experience in inpatient or outpatient pharmacy practices where direct patient contact and care occurs, -or- experience in a non-patient care setting. Sites vary widely from governmental agencies to pharmacy associations to specialized practices.

PHAR 7217. Elective Practice Experience V. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Five weeks of experience in inpatient or outpatient pharmacy practices where direct patient contact and care occurs, -or- experience in a non-patient care setting. Sites vary widely from governmental agencies to pharmacy associations to specialized practices. prereq: Pharm.D. I-III, MN Board of Pharmacy intern, criminal bkgd chk, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7230. Community Teacher Experience I. (0.4 cr.; S-N only; Every Fall)
EPHECT is a service learning experience which pairs second year students with a volunteer Community Teacher (CT). Students develop a working/professional relationship with their CT and learn from their CT??s health and life experiences. Students will work with their CT to choose and complete activities unique to each CT??s health profile. prereq: Students must have completed or be currently enrolled in the following courses: Becoming a Pharmacist Foundations of Pharmaceutical Care Applied Pharmaceutical Care Pharmaceutical Care Skills Lab I and II

PHAR 7340. Community Teacher Experience II. (0.4 cr.; S-N only; Every Spring)
EPHECT is a service learning experience which pairs second year students with a volunteer Community Teacher (CT). Through this course students develop a working/professional relationship with their CT and learn from their CT??s health and life experiences. Students will work with their CT to choose and complete activities unique to each CT??s health profile. prereq: Students must have completed or be currently enrolled in the following courses: Becoming a Pharmacist, Foundations of Pharmaceutical Care, Applied Pharmaceutical Care, Pharmaceutical Care Skills Lab I, II, and III, EPHECT I, and Foundations of SAPh

PHAR 7345. Introductory Institutional-Practice Pharmacy Experience. (3 cr.; S-N only; Every Fall & Summer)
The purpose of the Institutional IPPE is to introduce students to the fundamentals of pharmacy practice in the institutional pharmacy setting. The course will build upon knowledge gained in the first two years of the didactic curriculum. The student will spend 120 hours at the institutional site with their preceptor (who is approved by the MN BOP) and the College. An Additional 36 hours is allocated between assignments and online course materials. prereq: In addition to the requirements to have completed the community IPPE course, students must have successfully completed Phar 6730 (Professional Development and Assessment II), Phar 6736 (Cardiovascular Pharmacotherapy), Phar 6738 (Pharmacokinetics), Phar 6740 (Pharmaceutical Care Skills III), Phar 6742 (Colloquium I: Scholarly Presentation Skills), and Spring PD2 courses. Students must also be registered interns in the state of Minnesota.

PHAR 7401. Acute Patient Care Practice Experience. (12 cr.; S-N only; Every Fall, Spring & Summer)
Experience in an inpatient setting. Students are responsible for all drug-related needs of individual patients. Full-time for twelve weeks. prereq: Pharm.D. I-III, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7411. Ambulatory Patient Care Practice Experience I. (5 cr.; S-N only; Every Fall, Spring & Summer)
Experience in an ambulatory setting. Students responsible for drug-related needs of individual patients. Full-time for five weeks. prereq: Pharm.D. IV, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7415. Ambulatory Patient Care Practice Experience II. (2.5 cr.; S-N only; Every Fall, Spring & Summer)
Experience in an ambulatory setting. Students responsible for drug-related needs of individual patients. Full-time for ten weeks. prereq: Pharm.D. V, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity
PHAR 7412. Ambulatory Care Elective 2. (5 cr.; S-N only; Every Fall, Spring & Summer) Experience in an ambulatory setting. Students responsible for drug-related needs of individual patients. Full-time for five weeks. prereq: Pharm.D. IV, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHAR 7413. Community Pharmacy Practice Experience. (5 cr.; S-N only; Every Fall, Spring & Summer) Students assigned to participating community pharmacies and involved in community practice activities full-time for five weeks. prereq: Pharm.D. IV, MN Board of Pharmacy intern, criminal background check, BLS CPR certification, proof of negative Mantoux test [or explanation of positive test], proof of chicken pox immunity

PHIL 1001. Introduction to Philosophy. (HUMANITIES; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to philosophical heritage through examination of several classic philosophical problems such as the existence of God, nature of knowledge, free will versus determinism, and the relation of mind to body.

PHIL 1003. Ethics and Society. (HUMANITIES,CDIVERSITY; 3 cr.; A-F or Audit; Every Fall & Spring) Classic theories addressing questions of whether morality is subjective or objective, cultural relativism versus universal rules, how right and wrong should be determined. Moral issues such as euthanasia, the environment, population and birth control, nuclear deterrence, alternative life styles, and capital punishment in their international dimension. prereq: credit will not be granted if already received for CLA 1101

PHIL 1005. Philosophy through Dialogue and Debate. (COMM & LAN; 3 cr.; A-F or Audit; Every Spring) Oral communication has always been an essential part of Philosophy, both in the development of philosophical positions and in their rigorous evaluation and revision. This course will prepare students to communicate effectively in the oral communication methods most frequently used in Philosophy: dialogue, debate, presentation with question-and-answer, panel forum and open discussion. We will engage with foundational issues in the philosophical tradition, including: the nature and ethical aspects of communication and persuasion, questions of personal identity, arguments for and against the existence of God, among others.

PHIL 1007. Philosophy and World Religions. (HUMANITIES,GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Spring) Comparative philosophical examination of teachings and practices of several major world religions selected from ancient polytheism, Christianity, Judaism, Islam, Taoism, Buddhism, Hinduism, and various Native American and African religions.

PHIL 1008. Critical Thinking. (LOGIC & QR; 4 cr.; A-F or Audit; Every Fall & Spring) Patterns of reasoning encountered in everyday life, including advertising, editorials, and politics. Use of language in formulating arguments; differences between deductive and inductive arguments; how to detect and avoid mistakes in reasoning.

PHIL 1018. Logic. (LOGIC & QR; 4 cr.; A-F or Audit; Every Fall & Spring) Introduction to symbolic logic. Nature of language, species of arguments, informal versus formal arguments, techniques of translation, methods of sentential logic, and methods of predicate logic.

PHIL 1021. Classical Mythology. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Fall & Spring) Readings in Greek and Roman myths, especially in those that have influenced Western culture.

PHIL 1025. Introduction to Cognitive Science. (NAT SCI; 3 cr.; A-F or Audit; Every Fall) The Cognitive Sciences investigate the mind from an interdisciplinary perspective using resources from such diverse disciplines as psychology, philosophy, computer science, and neuroscience. This class provides a general introduction to prominent theories/themes from Cognitive Sciences as well as a more detailed investigation of various select topics. Liberal Education natural science credit will be effective fall 2015.

PHIL 2001. Existential Philosophy and the Arts. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Spring) This course examines themes of absurdity, alienation, freedom, nihilism, and death through philosophical writings, short stories, plays, novels, animation, music, and film. The works of thinkers and artists like De Beauvoir, Beckett, Camus, Calvino, The Cohen Brothers, Dostoyevsky, Ellison, Fincher, Herzfeld, Jarmusch, Kafka, Kierkegaard, Malick, and Sartre will be analyzed.

PHIL 2011. Philosophy of Language. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring) Introduction to theories of meaning and truth and the structure of language. Relation of language to thought and the world; semantics and syntax; speech acts and performative utterances; descriptions and reference; and structuralism and the possibility of objective knowledge. prereq: Course in logic or literary analysis or human communication or CS or math or instructor consent

PHIL 2021. Science and Pseudo-Science: Thinking about Weird Things. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Fall & Spring) A critical introduction to the nature of knowledge and belief by focusing on contemporary issues, such as UFOs, ESP, controversial creationism and evolution, and near-death experiences, which explains the differences between rational beliefs and articles of faith and between science and pseudo-science.

PHIL 3025. Philosophy of Race and Racism. (4 cr.; A-F or Audit; Periodic Spring) This course will examine the origins, current causes, and consequences of racism but only after addressing these more fundamental questions: Is race a biological phenomenon? What is it if it is not biological? Is race nothing at all? Given the real facts about race, how
PHIL 3000. Colloquium for Majors. (1 cr.; S-N or Audit; Every Fall & Spring) Lectures and discussion groups on variety of philosophical topics; required reading; places and topics to be announced. Prereq: Phil major/ minor, department consent; attendance at 12 dept-approved lectures/discussions over 4-yr period; regis only during semester of 10th lect

PHIL 4900. Seminar in Philosophy. (4 cr. [max 12 cr.]; A-F or Audit; Every Fall) Detailed examination of major topics or philosophical works. See department for details. Prereq: 12 cr Phil or instructor consent; no grad credit

PHIL 5991. Independent Study. (1-3 cr. [max 10 cr.]; A-F or Audit; Every Fall, Spring & Summer) Work in problems of special interest to student arranged with instructor before registration. Written work required. May be taken in conjunction with another philosophy course. Prereq: instructor consent

PHIL 5997. Intern Teaching Assistantship. (2 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer) Practical experience in assisting teaching of philosophy. Application deadline one week before beginning of registration for the following semester. Prereq: instructor consent

PHIL 5999. Directed Study. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall) Details on max credits, instructor consent, and prerequisites provided. Prereq: 12 cr Phil or instructor consent; max 12 cr.

PHIL 5997. Intern Teaching Assistantship. (2 cr. [max 4 cr.]; A-F or Audit; Every Fall, Spring & Summer) Practical experience in assisting teaching of philosophy. Application deadline one week before beginning of registration for the following semester. Prereq: instructor consent

PHIL 3195. Special Topics: (Various Titles to be Assigned). (3-9 cr.; A-F or Audit; Periodic Fall & Spring) In-depth examination of a particular philosopher or problem in philosophy. Specific course announced in [Class Schedule]. Prereq: 1001 or instructor consent

PHIL 3222. Medical Ethics. (4 cr.; A-F or Audit; Periodic Spring) Values underlying the health care professions and ethical dilemmas in medical contexts. Patients’ rights and autonomy, medical paternalism, confidentiality, truth-telling, euthanasia.

PHIL 3231. Law and Punishment. (4 cr.; A-F or Audit; Every Spring) Nature of law, natural law theory, and legal positivism and their relationship to traditional and contemporary theories of punishment; deterrence, reform, retribution, rehabilitation, social defense, restitution. Prereq: 1001 or SOC 1301 or CRIM 1301

PHIL 3242. Values and Technology. (HUMANITIES; 3 cr.; A-F or Audit; Every Fall & Spring) Problems related to science and technology. Application of moral theory to issues raised by technology, such as distribution of power, effects on environment, labor and social life, privacy, intellectual property rights, product liability, and professional codes of ethics. Prereq: 60 cr or instructor consent

PHIL 3245. Philosophy of Art. (3 cr.; A-F or Audit; Spring Odd Year) Possibility of definition of art or of the aesthetic experience examined through survey of classic aestheticians; philosophy of art criticism. Prereq: Min 45 cr or instructor consent. Credit will not be granted if already received for 5245

PHIL 3252. Philosophy of Science. (3 cr.; A-F only; Periodic Fall & Spring) Introduction to the central issues in philosophy of science, such as the nature of scientific explanation, laws of nature, induction, prediction, evidence, confirmation, intertheoretic reduction, empiricism, and scientific realism. Prereq: 1001 or 45 cr

PHIL 3281. Ethical Theory. (4 cr.; A-F or Audit; Fall Even Year) Characteristics and criteria of value statements; justification of moral standards; some 20th-century ethical theories. Prereq: 1001 or 1003 or instructor consent; credit will not be granted if already received for CLA 1101

PHIL 3291. Current Social Political Philosophy. (4 cr.; A-F or Audit; Periodic Fall & Spring) Detailed philosophical analysis of recent writings about social and political concepts such as freedom, democracy, socialism, communism, fascism, and anarchy. Prereq: 1001 or 1003 or instructor consent

PHIL 3301. Greek Philosophy. (4 cr.; A-F or Audit; Every Fall) Greek philosophy from the pre-Socratic era through Socrates, Plato, and Aristotle to Neoplatonism and the rediscovery of Aristotle. Philosophy of nature, theories of persons, possibility of human knowledge, happiness, and the good life. Prereq: 30 cr or instructor consent

PHIL 3303. The Birth of Modern Philosophy. (4 cr.; A-F or Audit; Every Fall & Spring) Impact of science and secularity on the rationalism of Descartes, Spinoza, Leibniz and the empiricism of Locke, Berkeley, and Hume. Prereq: 30 cr, course in phil, hist, pol sci or lit or instructor consent

PHIL 3319. 19th Century Philosophy. (4 cr.; A-F or Audit; Periodic Fall & Spring) Survey of the main issues and philosophers of the 19th century. Prereq: Min 30 cr or instructor consent

PHIL 3320. 20th Century Philosophy. (4 cr.; A-F or Audit; Periodic Fall & Spring) Survey of the main issues and philosophers of the 20th century. Prereq: Min 30 cr or instructor consent

PHIL 3325. Environmental Ethics. (HUMANITIES,SUSTAIN; 4 cr.; A-F or Audit; Periodic Fall & Spring) Moral dimension of relationship between humans and earth’s natural environment. Pollution, energy policy, economics, law, and environment; endangered species; rights of nonhumans; preservation and conservation; obligations toward future generations; ethical theory and environment. Prereq: 30 cr or instructor consent

PHIL 3421. Eastern Philosophy. (4 cr.; A-F or Audit; Fall Odd Year) Overview of Hinduism, Buddhism, Confucianism, and Taoism, including their accounts of the meaning of life, community versus the individual, the role of religion, ethics, metaphysics, and other topics. Analysis of basic concepts of Indian and Chinese civilizations. Prereq: minimum 30 credits

PHIL 3425. Philosophy of Psychology. (4 cr.; A-F or Audit; Periodic Fall & Spring) Current philosophical issues surrounding psychology: behaviorism, dualism, mind/brain identity theories, computer models of cognition, and functionalism. Prereq: 1001 or Psy 1003, 60 cr or instructor consent

PHIL 3555. Theory of Knowledge. (4 cr.; A-F or Audit; Spring Even Year) Introduction to theory of knowledge interpreted broadly to encompass perceptual, deductive, inductive, and other modes of knowledge. Beginning with standard conception of knowledge as warranted true belief, explores strengths and weaknesses of alternative accounts. Prereq: (Min 45 cr or instructor consent), 1001, 1003, 1007, 1008, 1018, (1101 or 1118), credit will not be granted if already received for PHIL 4655
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
for teaching physical fitness activities. Emphasis placed upon student development of personal competence in the activity. prereq: Pre PE major

PETE 1006. Teaching Aquatic Activities. (2 cr.; A-F or Audit; Every Fall) Basic skill progressions, teaching strategies, skill development activities, and skill analysis for teaching aquatic skills. Emphasis placed upon student development of personal competence in aquatics. prereq: Pre-Physical Education, HLTH 1700; credit will not be granted if already received for both PE 2240 and 2244.

PETE 1007. Teaching Dance Activities. (2 cr.; A-F or Audit; Every Spring) Basic skill progressions, teaching strategies, skill development activities, and skill analysis for teaching dance activities. Emphasis placed upon student development of personal competence in the activity. prereq: Pre PE major

PETE 1008. Teaching Rhythmic Activities. (2 cr.; A-F or Audit; Every Fall) Addresses basic skill progressions, teaching strategies, skill development and analysis for teaching rhythmic activities. Emphasis will be placed upon student development of personal competence in the activity. prereq: Pre PE major

PETE 2400. Applied Exercise Science. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Anatomical, physiological and biomechanical principles of physical training and conditioning. prereq: Pre PE major or coaching minor; credit will not be granted if already received for PEP 3035 or CC 3101 or ESAT 2400

PETE 3100. Curricular Approaches in Physical Education. (3 cr.; A-F or Audit; Every Fall) Exploration of a variety of curricular models and their applications in a physical education setting. Content includes the scope and sequence of educational programming, national and state standards, and a review and comparison of a variety of currently used curricular approaches. prereq: Pre-Physical Education

PETE 3200. Developmental Movement: Concepts and Experiences. (3 cr.; A-F or Audit; Every Spring) Theories, knowledge and practices involving human motor development; theories of motor development, recognition of the states of development, factors influencing growth and development, factors affecting motor learning and skills acquisition, and the evaluation and assessment of motor development and motor behavior will be presented. pre-req: PSY 2021, PE major, minimum 30 credits; credit will not be granted if already received for ESAT 3200

PETE 3400. Adapted Physical Education. (3 cr.; A-F or Audit; Every Fall) Developmental/adapted physical education for children with disabilities. prereq: PE major or candidate or instructor consent

PETE 3500. Student Assessment in Physical Education. (3 cr.; A-F or Audit; Every Fall) Key components of student assessment for physical education teacher education candidates. prereq: PE Major or Candidate or instructor consent

PETE 3501. Teaching Cross-Country Skiing. (1 cr.; A-F or Audit; Every Spring) Basic skills, teaching strategies, practice, drills, and skill analysis for teaching cross-country skiing. prereq: PE 1500 or instructor consent

PETE 3505. Teaching Outdoor Skills I. (2 cr.; A-F or Audit; Every Fall) Fall course in basic skills, teaching strategies, practice, drills, and skill analysis for teaching outdoor recreation skills with an emphasis on teaching canoeing; includes canoe skills, camp craft, back country travel, and safety. Field trips and skill development experiences are required beyond scheduled class hours. prereq: ENED 1201 or 1203, ENED 1202 or 1204, PE 1508, and Environmental & Outdoor Educ major or minor or instructor consent; Wilderness First Responder Certificate preferred.

PETE 3507. Teaching Outdoor Skills II. (2 cr.; Student Option; Every Spring) Spring course in basic skills, teaching strategies, practice, drills, and skill analysis for teaching outdoor recreation skills; includes navigation, camp craft, backpacking, back country travel, and safety. prereq: Environmental Outdoor Education or PE major and ENED 1201 or 1203 and ENED 1202 or 1204, and ENED 2300; credit will not be granted if already received for 1507

PETE 4100. Elementary Physical Education Methods. (4 cr.; A-F or Audit; Every Spring) Methods, instructional techniques and strategies, classroom management, lesson planning, developmental levels, elementary curriculum and standards. prereq: 3400, 3500, Secondary Teacher Education Program (STEP), instructor consent; PETE 4125 (concurrent registration allowed)

PETE 4125. Apprenticeship: Elementary. (2 cr.; A-F or Audit; Every Spring) Supervised clinical teaching experience with responsibilities that include planning, managing, and implementing instructional experiences for elementary school children. prereq: Secondary Teacher Education Program (STEP), pre or co-req PETE 4100 and instructor consent; no grad credit

PETE 4200. Secondary Physical Education Methods. (4 cr.; A-F only; Every Fall) Methods, instructional techniques and strategies, classroom management, lesson planning, developmental levels, secondary curriculum and standards, prereq: 1006, 4100, concurrent registration 4225, Secondary Teacher Education Program (STEP) or instructor consent

PETE 4225. Apprenticeship: Secondary. (2 cr.; A-F only; Every Fall) Supervised teaching experience with responsibilities that include planning, managing, and implementing instructional experiences for secondary school children. prereq: 1006, 4100, 4200 concurrent registration, Secondary Education Teacher Program (STEP) or instructor consent; no grad credit

PETE 4250. Supervised Teaching College I: Planning for Instruction. (1 cr. [max 2 cr.]; A-F only; Every Fall & Spring) Physical education teacher education majors plan and prepare materials to teach a college level physical education activity class. Implementation of this planned instruction occurs during PETE 4255 Supervised Teaching College II: Implementation and Management. prereq: 4100 or 4200, Secondary Teacher Education Program (STEP), instructor consent; no grad credit

PETE 4255. Supervised Teaching College II: Implementation and Class Management. (1 cr.; A-F or Audit; Every Fall & Spring) Faculty supervised teaching experience in a collegiate setting. Physical education teacher education majors teach and manage a college level physical education activity class under the daily supervision of a departmental faculty member. Implementation of planned instruction completed during PETE 4250 Supervised Teaching College I Planning for Instruction. prereq: 4250 and instructor consent; no grad credit

PETE 4600. Seminar in Physical Education. (1 cr.; A-F or Audit; Every Fall & Spring) Professional development seminar for physical education teacher education candidates. Course will address decision making, reflective teaching, and professional and specific concerns of student teachers. Candidates will finalize development of a professional portfolio. prereq: Physical Education candidate; no grad credit

PETE 4991. Independent Study. (1-4 cr.; [max 8 cr.]; A-F or Audit; Every Fall & Spring) Research or study in selected noncurricular area of exercise science or physical education. prereq: PE or Exer Sci major and instructor consent; no grad credit

PETE 4992. Directed Readings. (1-3 cr.; [max 6 cr.]; A-F or Audit; Every Fall & Spring) Study of varying topics by reading specific books, journal articles, etc. Topics selected based on student interests or academic preparation. prereq: instructor consent; no grad credit

PETE 5991. Independent Study. (1-4 cr.; [max 8 cr.]; A-F or Audit; Every Fall, Spring & Summer) Directed research and study in selected area of physical education or exercise science. prereq: grad student, instructor consent

Physics (PHYS)

PHYS 1001. Introduction to Physics I. (NAT SCI; 5 cr.; A-F or Audit; Every Fall & Spring) Noncalculus general physics course primarily for certain preprofessional fields. Topics in mechanics, heat, and sound. prereq: Algebra, trig

PHYS 1002. Introduction to Physics II. (5 cr.; A-F or Audit; Every Fall & Spring)
Noncalculus general physics course primarily for certain preprofessional fields. Topics in light, electricity, magnetism, and modern physics. prereq: 1001 or 2013 or 2017
PHYS 1011. Conceptual Physics. (NAT SCI; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Descriptive, nonmathematical survey of basic concepts in physics from Newton to present. Instructor has considerable latitude regarding content. Primarily for liberal arts students; not for preprofessional preparation, prereq: Will not satisfy major or minor requirements in phys
PHYS 1012. Conceptual Physics Lab. (1 cr. ; A-F or Audit; Every Fall & Spring) Laboratory covering basic physics principles including mechanisms, waves, and optics, prereq: previous or concurrent registration in PHYS 1011
PHYS 1021. Exploring Current Topics in Physics. (; 1 cr. ; A-F or Audit; Every Fall) Introduction to current topics in the field of physics, with emphasis on recent research developments and local research activities.
PHYS 1033. Cosmology, String Theory and the Death of the Universe. (NAT SCI; 3 cr. ; A-F or Audit; Every Spring) A qualitative introduction to cosmology and string theory: the structure, evolution, and death of the universe, and of the galaxies, stars and planets it contains; fundamental theories for the structure, including extra dimensions, supersymmetry, and string dualities; extinction-level events ranging in scale from planetary to universal.
PHYS 1035. Energy. (NAT SCI,SUSTAIN; 3 cr. ; A-F only; Periodic Spring) Energy as a fundamental topic for understanding both the natural and man-made world. Will discuss concepts of human production, transmission, storage, and utilization of energy, as well as how these processes interact with natural pathways of energy such as the carbon cycle.
PHYS 2013. General Physics I. (NAT SCI; 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Calculus-based introduction to Newtonian Mechanics, fluid mechanics, and heat. The companion laboratory, PHYS 2014 should be taken concurrently. The combination of PHYS 2013 and 2014 meets liberal education category 4, prereq: previous or concurrent registration in PHYS 2014. Prerequisite of Math 1290 or 1296 or 1596, or physics major or instructor permission. Credit will not be granted if already received for PHYS PHYS 2011 or PHYS 2013.
PHYS 2018. Honors General Physics II. (4 cr. ; A-F or Audit; Every Spring) Advanced coverage of calculus-based introduction to electricity magnetism and optics. Mathematically and conceptually demanding problem solving techniques. The companion laboratory, PHYS 2016 should be taken concurrently. Credit will not be granted if already received for PHYS 2012 or 2015.
PHYS 2021. Relativity and Quantum Physics. (; 4 cr. ; A-F or Audit; Every Spring) Descriptive course; relativity, quantum mechanics, hydrogen atom, multi-electron atoms, molecular structure, quantum statistics, thermal radiation, solid state physics, nuclear physics, prereq: 2015 and 2016 or 2018 and 2016 (or 2012)
PHYS 2022. Classical Physics. (4 cr. ; A-F or Audit; Every Fall) Survey of various topics in classical physics: vector angular momentum, AC circuits, oscillatory motion, waves, physical optics. prereq: 2015 or 2016 and 2018 as pre or co-req
PHYS 2033. Classical and Quantum Physics Lab. (2 cr. ; A-F or Audit; Every Spring) Experiments and computer simulations selected to provide experience with both concepts and techniques in classical and quantum physics. prereq: 2021 and 2022 (concurrent registration is allowed)
PHYS 2199. Physics Tutoring. (1-2 cr. [max 4 cr.]; S-N or Audit; Every Fall & Spring) Tutoring students in 1xxx- and 2xxx-level physics courses, prereq: 2012 or 2015 and 2016, department consent
PHYS 3033. Analytical Methods in Physics. (; 3 cr. ; A-F or Audit; Every Fall) A survey of analytical methods for the solution of fundamental equations of physics, such as those of Newton, Schrodinger, and Maxwell, and of the underlying mathematics, including complex variables, linear algebra, vector analysis, and ordinary and partial differential equations. prereq: 2021, 2022, Math 3280 and 3298
PHYS 3061. Instrumentation. (; 3 cr. ; A-F or Audit; Fall Even Year) Introduction to electronics for scientific applications. DC and AC circuits, linear and nonlinear devices, integrated circuits. Analog electronics. Transducers. Digital electronics. Applications of microcomputers to lab data acquisition. prereq: 2022 and one semester programming
PHYS 3091. Independent Study. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Directed individual study. prereq: department consent
PHYS 3094. Physics Research. (1-6 cr. ; S-N or Audit; Every Fall, Spring & Summer) Supervised research. prereq: department consent
PHYS 3561. Astrophysics. (3 cr. ; A-F or Audit; Spring Odd Year) The application of physical laws and processes to the understanding of astrophysical objects: celestial mechanics, energy transport, stellar structure and evolution, the interstellar medium, stellar remnants, galactic structure and dynamics, large scale structure and cosmology, prereq: 2021
PHYS 4001. Classical Mechanics. (; 4 cr. ; A-F or Audit; Every Fall) Theoretical mechanics, including Lagrangian and Hamiltonian functions, symmetries, and conservation laws. prereq: 2022 or 2001, Math 3280
PHYS 4011. Electromagnetic Theory. (; 4 cr. ; A-F or Audit; Every Spring) Electric and magnetic fields, Maxwell's equations and applications, radiation. prereq: 3033
PHYS 4021. Quantum Physics II. (4 cr. ; A-F or Audit; Every Fall) Quantum wave mechanics with applications; Schrodinger equation, angular momentum, hydrogen atom, symmetries, identical particles. prereq: 3033
PHYS 4031. Thermal and Statistical Physics. (; 4 cr. ; A-F or Audit; Every Spring) Elements of thermodynamics; principles of statistical physics applied to equilibrium properties of classical and quantum systems. prereq: 2021
PHYS 4071. Quantum Computation. (3 cr. ; A-F or Audit; Periodic Spring) Quantum mechanics in Heisenberg formalism, Quantum information theory, Shor's factoring
algorithm, Grover's search algorithm, quantum communication and quantum cryptography. 
prereq: MATH 3280 or PHYS 2021; no grad credit

PHYS 4090. Undergraduate Physics Seminar. (1 cr.; A-F or Audit; Every Spring) Preparation and presentation of oral reports on approved physics topics, research projects, and journal articles. Discussion of professional ethics. Not for graduate credit. Pre-req: minimum 90 credits

PHYS 4110. Physics for Science Teachers. (2 cr.; A-F or Audit; Every Spring) Preparation for teaching physics at the high school level. Review of physics concepts important at the high school level. Methods for effective presentation, including problem solving, discussions, demonstrations and lab experiments. Pre-req: 1002 or 2012 of 2015 and 2016, no grad credit

PHYS 5033. Introduction to Particle Physics. (3 cr.; A-F or Audit; Periodic Fall) A survey of particle physics, including physics beyond the Standard Model. Topics include symmetries and conservation laws, quark models, quantum electrodynamics and chromodynamics, Feynman diagrams, and neutrino oscillations. Pre-req: 2021, 2022, MATH 3280, 3298

PHYS 5041. Optics. (3 cr.; A-F or Audit; Spring Even Year) Fundamentals of optical physics. Pre-req: 2022

PHYS 5052. Computational Methods in Physics. (3 cr.; A-F or Audit; Fall Odd Year) Applications of numerical methods to problems in classical and quantum physics, emphasizing ordinary and partial differential equations. Computer modeling of physical systems and experimentation with simulations of physical systems. Pre-req: 2021, 1 sem programming, Math 3280

PHYS 5053. Data Analysis Methods in Physics. (3 cr.; A-F or Audit; Fall Even Year) Problems of data analysis in the context of dynamical models. Emphasis will be placed on large datasets that arise in astrophysics, particle dynamics, physical oceanography and meteorology. (2 hr lect & 2 hr lab) Pre-req: 2012 or 2015 or 2016, 1 sem programming, lab or field experience beyond 2012/2015 and 2016

PHYS 5061. Experimental Methods. (3 cr.; A-F or Audit; Spring Odd Year) Instruction and practice in methods of experimental physics; microcomputer-based data acquisition; vacuum techniques. Pre-req: 2033 and 3061

PHYS 5063. Theoretical Methods. (3 cr.; A-F or Audit; Spring Odd Year) Selection of theoretical methods used in physics including variational calculus, Lie groups and algebra path integrals, perturbation theory, renormalization group, differential geometry, pre-req: grad student or instructor consent

PHYS 5071. Quantum Computation. (3 cr.; A-F or Audit; Periodic Spring) Quantum mechanics in Heisenberg formalism, Quantum information theory, Schor's factoring algorithm, Grover's search algorithm, quantum communication and quantum cryptography. Prereq: Math 3280 or PHYS 2021 or graduate student

PHYS 5090. Physics Seminar. (1 cr. [max 2 cr.]; A-F or Audit; Every Spring) Preparation and presentation of oral reports on approved physics topics, research projects, and journal articles. Pre-req: Sr or grad student consent

PHYS 5501. Advanced Classical Mechanics. (3 cr.; A-F or Audit; Fall Odd Year) Hamiltonian and Lagrangian formulations for discrete systems, canonical transformations, nonlinear dynamics, and chaos theory. Prereq: 4001

PHYS 5511. Electrodynamics. (3 cr.; A-F or Audit; Spring Odd Year) Maxwell's equations, relativity and electrodynamics, radiation and scattering of electromagnetic waves, relativistic particles in electromagnetic fields, and radiation reaction. Prereq: 4011

PHYS 5521. Quantum Mechanics I. (3 cr.; A-F or Audit; Fall Even Year) Schrodinger equation, operator formulation, angular momentum, symmetries. Prereq: 4021

PHYS 5522. Quantum Mechanics II. (3 cr.; A-F or Audit; Spring Odd Year) Identical particles, perturbation theory, scattering, interaction with electromagnetic field. Prereq: 5521

PHYS 5531. Introduction to Solid State Physics. (3 cr.; A-F or Audit; Spring Even Year) Solid state, thermal, and electronic properties of solids and solid surfaces. Prereq: 4021, 4031

PHYS 5541. Fluid Dynamics. (3 cr.; A-F or Audit; Spring Odd Year) Analytic and numeric treatment of dynamics of fluids. Rotating, stratified fluids, with applications in limnology, oceanography, and meteorology. Prereq: 2022 or 2001, Math 3280

PHYS 5551. General Relativity. (4 cr.; A-F or Audit; Fall Even Year) Differential geometry, tensors, metrics, curvature, Einstein’s equation, Newtonian limit, Killing vectors, cosmology, perfect fluids, Schwarzschild and Kerr solutions, observational tests, black holes. Prereq: 4001

PHYS 5561. Astrophysics. (3 cr.; A-F or Audit; Spring Odd Year) The application of physical laws and processes to the understanding of astrophysical objects: celestial mechanics, energy transport, stellar structure and evolution, the interstellar medium, stellar remnants, galactic structure and dynamics, large scale structure and cosmology. Prereq: 2021 and 2022, Math 3280

PHYS 5591. Independent Study. (1-3 cr. [max 6 cr.]; S-N or Audit; Every Fall & Spring) Special studies, useful in individual graduate programs, not available in regular course offerings. Prereq: Consent of director of graduate studies, instructor consent

PHYS 5594. Physics Research. (1-3 cr. [max 6 cr.]; S-N or Audit; Every Fall, Spring & Summer) Physics Research Prereq: Instructor consent

PHYS 8333. FTE: Master’s. (1 cr.; A-F or Audit; Every Spring) (No description) Prereq: Master’s student, adviser and DGS consent

PHYS 8777. Thesis Credits: Master’s. (1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall & Spring) (No description) Prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

Political Science (POL)

POL 1011. American Government and Politics. (SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring) Principles of American national government. Survey of American governmental system, structure, operations, and services: constitutionalism, federalism, civil liberties, parties, pressure groups, and elections.

POL 1015. Introduction to Political Science. (3 cr.; A-F or Audit; Every Spring) An introduction to the history, development, scope, and methods of political science as a scholarly discipline. Prereq: 1011, political science majors and minors or instructor consent

POL 1050. International Relations. (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Spring) Introduction to contemporary international politics: levels of analysis; the international system; nation-state behavior; foreign policy decision making; economic and defense policy issues.

POL 1500. Introduction to Comparative Politics. (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Spring) Survey of the politics of countries selected to reflect alternative styles of politics and forms of government; examples of Western liberal democratic, Communist and post-Communist, and Third World systems.

POL 1610. Introduction to Political Theory. (HUMANITIES; 3 cr.; A-F or Audit; Every Fall & Spring) Introduction to the history of political thought from a thematic perspective such as freedom and citizenship, democracy and its critics, political obligation and justice, diversity and inequality. Close attention to method of interpretation and argument.

POL 1800. Mock Trial. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Mock trial covers the procedures, evidentiary rules, and functioning of the judiciary at the trial court level. Students apply their classroom training as attorneys and witnesses in American Mock Trial association sanctioned tournaments. The course increases student
skills in critical thinking, analysis, and oral and written expression and argument. prereq: Students may take this course twice for a maximum of 6 credits. Political Science majors and minors may only apply one attempt towards the major or minor. Political Science majors and minors may only take the course once.

POL 2700. Methodology and Analysis. (LOGIC & Q; 4 cr.; A-F or Audit; Every Fall) Theory and methods of conducting political research: theory construction, concept formulation, survey research and sampling design, basic statistical analysis, and measurement of relationships.

POL 3001. American Public Policy. (3 cr.; A-F or Audit; Fall Even Year) Approaches to policy study, context of policy process, and discussion of policy issues. prereq: 1011, min 45 cr or instructor consent

POL 3015. State and Local Government. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) State and local governments in the United States; governmental institutions and processes; intergovernmental relations. Special reference to Minnesota prereq: 1011, 45 cr or instructor consent; credit will not be granted if already received for 2020

POL 3025. Popular Culture and Politics. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Summer) Evaluation of the presentation of American political institutions, officials, and policy issues in mass entertainment. How accurate are the portrayals? How influential is Hollywood’s view of American government? How do Americans know what they think they know about politics?

POL 3040. Women and Politics. (3 cr.; A-F or Audit; Spring Even Year) Women’s political status; implications of women’s role in political process; women as political actors; feminist critique and vision of politics. prereq: 45 cr or instructor consent

POL 3080. Environment and Politics. (3 cr.; A-F or Audit; Every Fall) American natural resource problems with special attention to conservation activities on national, state, and local levels; development of conservation agencies in Minnesota. prereq: 1011, 45 cr or instructor consent

POL 3097. Government Internship. (1-12 cr.; S-N or Audit; Every Fall, Spring & Summer) Scheduled work assignments with direct supervision in performance of governmental functions; full- or part-time employment. prereq: 60 cr; 4 cr max from 3097, 3197, 3297 may be applied toward advanced political science major requirements; instructor consent

POL 3100. Contemporary Issues in American Politics. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Detailed examination and analysis of important and evolving contemporary issues in state, local, and national government, law, public policy and/or public administration. Policy recommendations dealing with each issue. prereq: POL 1011

POL 3120. Congress and the Presidency. (4 cr.; A-F or Audit; Periodic Fall & Spring) Functioning and structure of the United States Congress and Presidency. Members of Congress and the Presidency: their characteristics, their selection, roles they play, how they interact with each other as well as with others in the policy-making process. prereq: 1011, 45 cr or instructor consent

POL 3131. Judicial Politics and Policy Making. (3 cr.; A-F or Audit; Spring Odd Year) An examination of the characteristics and behavior of judicial institutions, emphasizing the interaction with other policy-makers and social and political problems. Investigates the policy roles of state and lower federal courts and the U.S. Supreme Court.

POL 3141. Pol Parties & Polarization. (3 cr.; A-F only; Spring Odd Year) Covers the development of political parties in the United States and the role of political parties in government. Examines the causes and consequences of political party polarization in areas like law-making, elections and representation.

POL 3142. Voting, Campaigning, and Elections. (3 cr.; A-F only; Every Fall) Covers theories of voting, including how they explain who votes and vote choice. Examines how campaign money, policy issues, the media, and campaign advertising play a role in presidential and congressional elections. prereq: 1011, 45 cr

POL 3143. Political Psychology. (3 cr.; A-F or Audit; Spring Even Year) How political opinion formation and behavior of citizens and political elites is shaped by psychological factors, including personality, attitudes, values, and emotions. Study opinion formation, mass media, identity, and culture. prereq: minimum 45 credits

POL 3150. American Constitutional Law I. (3 cr.; A-F or Audit; Every Fall) Institutional powers and civil rights: judicial review; authority of Congress and President; powers in war and foreign affairs; power of national and state governments; property rights; civil rights and equal protection (race, gender, and other groups); anti-discrimination; affirmative action. prereq: 1011, 45 cr or instructor consent

POL 3151. American Constitutional Law II. (3 cr.; A-F or Audit; Every Spring) Civil liberties: incorporation of the Bill of Rights; Due Process clause; freedom of religion; freedom of speech; freedom of press; privacy rights; rights of the accused; search and seizure; rights before the Courts; cruel and unusual punishment. prereq: 1011, 45 cr or instructor consent

POL 3170. Political Interest Groups and Individuals. (3 cr.; A-F or Audit; Spring Even Year) Role of interest groups and individuals who lobby government to influence public policy. Internal dynamics of groups; strategies of lobbying and its regulation. prereq: 1011, 45 cr or instructor consent

POL 3195. Special Topics: (Various Titles to Be Assigned). (1-4 cr.; max 8 cr.; A-F or Audit; Every Fall, Spring & Summer) Detailed examination of contemporary topics in political science. Specific course announced in Class Schedule. prereq: 45 credits including 6 credits in social sciences or instructor consent

POL 3197. Nongovernmental Internship. (1-12 cr.; S-N or Audit; Every Fall, Spring & Summer) Supervised, scheduled work assignments in performance of political functions in nongovernmental organizations; full- or part- time employment. Not all outside work is eligible; see department head for requirements. prereq: 60 cr; 4 cr max from 3097, 3197, 3297 may be applied toward advanced political science major requirements; instructor consent

POL 3311. Public Opinion and Polling Methods. (4 cr.; A-F only; Every Spring) Formation of public opinion; attitudes and nonattitudes; polls in the media; role of public opinion in democracy; measurement of opinion; survey methods; questionnaire construction; sampling techniques. prereq: 1011 or equivalent, 45 cr

POL 3400. Contemporary Issues in World Politics. (4 cr.; max 8 cr.; A-F or Audit; Fall Even Year) Detailed examination and analysis of selected contemporary issues in world politics and international relations. Policy recommendations dealing with each issue. prereq: 1050, 45 cr; 4 cr may be applied toward political science major requirements

POL 3403. American Foreign Policy. (3 cr.; A-F only; Fall Odd Year) Various influences on the making of American foreign policy; understanding why particular foreign policy choices are made and the effects of a changing international environment on American foreign policy. prereq: 1011 or 1050, min 45 cr

POL 3420. International Organization and Global Governance. (3 cr.; A-F or Audit; Spring Odd Year) Explores the role of international organizations in world politics and the evolution of global governance systems. Includes examinations of state sovereignty, methods for achieving cooperation, and whether international organizations are effective means for achieving global collective goods. prereq: 1050 and minimum 45 credits

POL 3426. Politics of International Law. (4 cr.; A-F or Audit; Periodic Fall & Spring) Investigation of development, operations, and significance of international organization and law in contemporary international politics. prereq: minimum 45 credits, including 8 credits of social science or instructor consent

POL 3430. Global Health Politics. (3 cr.; A-F or Audit; Periodic Spring) Examination of the political effects of health and disease globally; how health influences
relations among states, and the role of national and international actors in addressing global health concerns. Topics may include HIV/AIDS, financing for health programs, the role of trade and the military in facilitating the spread of diseases, noncommunicable diseases, and global health governance. prereq: 1050 or 1500 or instructor consent

POL 3451. Theories of International Relations. (4 cr.; A-F or Audit; Spring Odd Year) Historical and contemporary theories of international relations. Views of contending theorists are analyzed and assessed. prereq: 45 cr including 8 cr social science or instructor consent

POL 3456. International Security: War and More. (4 cr.; A-F or Audit; Spring Even Year) Introduction to a variety of different aspects of International Security, including warfare, terrorism, human rights, environmental justice, and women and violence worldwide. Includes discussion of efforts to ensure and barriers to achieving international security in its various forms. prereq: Minimum 45 credits

POL 3511. Politics of South Asia. (4 cr.; A-F or Audit; Spring Odd Year) Comparative study of five South Asian countries (namely India, Pakistan, Bangladesh, Sri Lanka, and Nepal). It analyzes the history and impact of colonialism in South Asia; state formations in South Asia; and controversies in recent South Asian politics over issues like globalization, democratization, religious fundamentalism, nuclearism, and gender. Policy solutions to these problems will be considered. prereq: 1500, 45 cr including 8 cr social sciences or instructor consent

POL 3515. Theories of Comparative Politics. (4 cr.; A-F or Audit; Fall Even Year) Introduces the theoretical, methodological, and substantive debates in the discipline of Comparative Politics. prereq: 1500, 45 cr including 8 cr social sciences or instructor consent

POL 3517. Western European Political Systems. (4 cr.; A-F or Audit; Fall Odd Year) Comparative analysis of development and operation of political-governmental institutions and processes in selected Western European countries; political and ideological patterns and trends; problems of democratic politics; policy issues in advanced industrial societies; and the future of the "welfare state." prereq: 45 cr including 8 cr social sciences or instructor consent

POL 3518. Transitional Politics of Asia. (3 cr.; A-F only; Spring Odd Year) This class is a comparative study of the states in Asia namely India, China, Japan, and others. The class will explore the historical trajectories of these states; will study how these histories have given rise to different forms of their current state formations; will explore their contemporary political systems; economies; their socio-cultural and gender dynamics; and contemporary policy issues faced by these states. The class will also analyze the geo-strategic significance of Asia to the West/United States in the contemporary eras of globalization. pre-req: POL 1500 or instructor's consent

POL 3525. African Politics. (3 cr.; A-F or Audit; Fall Odd Year) A survey of politics in Africa, with an emphasis on sub-Saharan Africa. Includes discussions of pre-colonial history, colonialism and its effects, the politics of independence movements, contemporary political systems, and the forces influencing politics on the continent. prereq: 1050 or 1500, 45 cr including 8 social science credits or instructor consent

POL 3530. Comparative Constitutional Law and Judicial Politics. (5 cr.; A-F or Audit; Spring Odd Year) A cross-national examination of the intersection of law and politics in the development of constitutional law, especially in newly emerging democracies. Includes an investigation of the relationship between globalization and constitutional development and the role that law plays in social control, dispute resolution, protection of minorities, political change, and economic development. prereq: minimum 45 credits or permission of instructor

POL 3570. Politics of Developing Nations. (3 cr.; A-F or Audit; Fall Even, Spring Odd Year) Nature of political development; individual and institutional causes and consequences of development; political economy of the Third World. prereq: 1050 or 1500 or 8 cr social sciences, 45 cr or instructor consent

POL 3575. Latin American Politics and Development. (4 cr.; A-F or Audit; Spring Even Year) A comparative examination of politics and development in the Latin American region. Topics of this course include transition to democracy, democratic consolidation, rule of law, human rights, the military and politics, women and politics, executive-legislative relations, civil society, and economic development. prereq: Minimum 45 credits

POL 3580. Central American Politics. (4 cr.; A-F or Audit; Spring Odd Year) Explores the history, politics, culture, and modern problems in Central America. Includes examination of the differences and similarities in colonial history among Central American countries, the role of U.S. influence on Central American politics and the economy, and legacies of civil wars. Then, it focuses on modern problems of violence against women, gangs, violent crime, and governance, and how international and domestic organizations and individuals can (or cannot) contribute to alleviating these problems. prereq: 1050, minimum 45 credits or instructor permission

POL 3600. Political Concepts. (4 cr.; A-F or Audit; Every Fall) Fundamental political themes and concepts in political theory, including but not limited to justice, liberty, equality, power, democracy, political obligation, and community. Perspectives of diverse political philosophies and cultures may be addressed. prereq: 45 credits or instructor consent

POL 3610. Political Economy: An Introduction. (3 cr.; A-F or Audit; Spring Even Year) Relationship between politics and economics and ways they affect each other, focusing on political and economic values/goals and their role in shaping public policy; policies and policy making in selected national systems; and the international economy. prereq: minimum 45 credits or instructor consent

POL 3651. Classical Political Thought. (4 cr.; A-F or Audit; Every Fall) Advanced survey of classical political thought, from ancient Greece to the rise of medieval Christianity and Islam to early Renaissance Italy. Major themes include the tensions between individuality and community, morality and politics, utopia and reality, and politics and literature. Major thinkers include Thucydides, Plato, Aristotle, Cicero, Augustine, al-Farabi, Aquinas and Machiavelli. prereq: 1610 or instructor consent

POL 3652. Modern Political Thought. (4 cr.; max 12 cr.; A-F or Audit; Every Spring) Advanced survey of political thought from Enlightenment to the present; course topic may include one or more of the following traditions of political theorizing: English (e.g. Hobbes, Locke, Burke, Bentham, Mill, Wollstonecraft), German (e.g. Kant, Hegel, Marx, Nietzsche, Habermas) or French (e.g. Montesquieu, Rousseau, Tocqueville, Foucault, Derrida). prereq: 1610 or instructor consent, course is repeatable with instructor consent only.

POL 4190. The Senior Seminar. (4 cr.; A-F or Audit; Every Fall & Spring) Supervised research and writing in current areas or issues of politics and political science, subject matter varying with instructor. prereq: 6 cr in relevant upper division political science courses, instructor consent

POL 4191. Independent Study. (1-4 cr.; max 6 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced study and research under supervision of a staff member. Student must consult with instructor before registration. prereq: 8 cr in political science, 6 cr in other social sciences, instructor consent

POL 4195. Special Topics: [Various Titles to Be Assigned]. (3 cr. [max 9 cr.]; A-F or Audit; Periodic Fall & Spring) Detailed examination of contemporary topics in political science. Specific course content announced in Class Schedule. prereq: 45 credits or instructor consent

POL 4910. Teaching Assistantship in Political Science. (1-2 cr.; max 3 cr.; S-N or Audit; Every Fall & Spring) Practical experience in teaching beginning courses in the department. Students serve as intern teachers assisting the instructor in administration of the course. Application deadline is one week before the beginning of registration for the following semester. prereq: 90 cr, political science major, instructor consent; 3 cr max may be applied to upper division political science major requirements and between Pol 3109 and 4910; no grad credit

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
PSY 1003. General Psychology. (SOC SCI; 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Scientific study of behavior: current knowledge of biological, social, and cognitive areas of psychology. Assessment, research methods, human development, personality, mental disorders, and therapy.

PSY 2003. Psychology: Discipline and Profession. ( 1 cr. ; A-F only; Every Fall, Spring & Summer) Orientation to psychology: the major, discipline, and professions available. Subfields of psychology, ethical issues, careers, preparation for graduate school, and opportunities for professional development. Introduction to research, available resources, and preparation for writing assignments required in upper-division psychology courses. prereq: Pre-psychology or psychology major

PSY 2020. Introduction to Statistics and Research Methods. ( 3 cr. ; A-F or Audit; Periodic Fall) Scientific method and designs used in published psychological research including quasi-experimental and survey designs accompanied by inferential statistics used to test research questions (including correlation and analysis of variance). prereq: psychology minor or Social Work major

PSY 2021. Developmental Psychology. (SOC SCI; CDIVERSITY; 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Major processes in human development, conception through lifespan; biological and cultural influences on physical-motor, cognitive, social, and emotional development; effects of diverse cultural traditions and values; social policy implications.

PSY 2023. Marriages and Families Worldwide. (GLOBAL PER; 4 cr. ; A-F or Audit; Every Fall & Spring) Family functions and structures worldwide: impact of expectations, gender roles, race, culture, and values on partner and parenting; love, sex, communication, power, abuse, stress, and satisfaction; small group experiences with focus on strengthening families.

PSY 2223. Gender in Society. (CDIVERSITY; 4 cr. ; A-F or Audit; Every Fall & Spring) Sociocultural, historical, and developmental formations of men’s and women’s roles and experiences in society. Effects on personality, interpersonal relationships, and life choices.

PSY 3010. Internship Preparation. ( 2 cr. ; A-F only; Every Fall & Spring) For psychology majors preparing to complete an internship. Includes career development, site selection, exploration of community or business organizations, and study of ethics. prereq: Psychology major or instructor consent

PSY 3011. Internship in Psychology. ( 3 cr. [max 6 cr.]; A-F only; Every Fall & Spring) Internship with a school, community agency or business. Nine hours supervised experience on site and one hour on campus per week. Students complete an internship contract, weekly log, relevant readings, and paper or presentation. Includes direct contact with clients and staff. prereq: 3010 or instructor consent

PSY 3020. Statistical Methods. ( 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Descriptive statistics; introduction to correlational analysis and regression; sampling techniques and statistical inference; applications of simple and factorial design analysis of variance and other parametric and nonparametric hypothesis test statistics in the behavioral sciences. prereq: Math ACT 21 or higher or MATH 1005

PSY 3021. Experimental Design and Methodology. ( 4 cr. ; A-F or Audit; Every Fall & Spring) Introduction to problems and methods of experimentation in psychology; logical and scientific basis of experimental psychology; problems and techniques of designing, conducting, and reporting experiments. prereq: 2003, 3020, Psychology major prereq: 2003, 3020, Psychology major

PSY 3022. Applied Methods and Measurement. ( 4 cr. ; A-F or Audit; Every Fall & Spring) Designing, conducting, and reporting experiments: constructing, choosing, and interpreting psychological instruments; experimental procedures and research findings from various areas within psychology. prereq: psychology major, PSY 3020, 3021 or instructor consent prereq: psychology major, PSY 3020, 3021 or instructor consent

PSY 3051. Cross-cultural Psychology. ( 3 cr. ; A-F or Audit; Periodic Spring & Summer) Role of culture on behavior. Universal versus culture-specific aspects of psychological principles. Definition of culture, methodology, development of self and others, cognition, attitudes, emotions, applications in organizations, therapy, well-being. prereq: 1003 or instructor consent

PSY 3061. Physiological Psychology. ( 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Physiological basis of behavior, including central and peripheral nervous systems, sensory processes as they relate to perception, cognition, emotion, motivation, intelligence, and learning. prereq: 1003 or instructor consent

PSY 3081. History and Systems of Psychology. ( 3 cr. ; A-F or Audit; Every Fall, Spring & Summer) Survey of historical development and current status of contemporary systems and theories in psychology. prereq: 1003 or instructor consent

PSY 3111. Theories of Personality. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) Basic concepts, issues, and methods involved in study of human personality; introduction to selected theories on motives, dynamics, development, and description of human nature. prereq: 1003 or instructor consent

PSY 3121. Abnormal Psychology. ( 4 cr. ; A-F or Audit; Every Fall, Spring & Summer) Mental disorders, including DSM-IV classification system, etiology, and treatment. prereq: 1003 or instructor consent

PSY 3122. Child and Adolescent Abnormal Psychology. ( 3 cr. ; A-F only; Periodic Fall, Spring & Summer) Overview of psychological disorders common among children and adolescents, including theoretical approaches, diagnostic criteria, developmental trajectory and framework, etiology, risk and protective factors, and treatment. Ethical considerations, research methodology, and diversity considerations in child clinical psychology will also be covered. prereq: PSY 1003 and PSY 2021 or instructor consent

PSY 3201. Social Psychology. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) How thoughts, feelings, and behavior of individuals are affected by others. Social influence and interaction. Attitude measurement and change, conformity, impression formation, attribution theory, aggression, and prosocial behavior. prereq: 1003 or instructor consent

PSY 3211. Group Dynamics. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) Principles and processes of interaction in groups; structure and functioning of groups; leadership, communication, decision making, social influence; aspects of sensitivity training. prereq: 1003 or instructor consent

PSY 3215. Topics in Human Sexuality. ( 3 cr. ; A-F or Audit; Every Fall & Spring) Biological and psychosocial factors relating to human sexuality, sexual functioning, gender, and related issues. Group discussion of societal factors, values, and attitudes and their impact on behavior. prereq: 1003 or instructor consent

PSY 3231. Psychology of Drug Use. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) Basic understanding of drug effects: tolerance and withdrawal; commonality among drugs of abuse; how antischizophrenic, antinanmic, antianxiety, and antidepressant drugs are thought to work; reward centers in brain. prereq: 1003 or instructor consent

PSY 3371. Child and Adolescent Psychology. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) Growth of individual and social forms of human behavior. Interaction of heredity and environment on physical, intellectual, social, and emotional changes from conception to adulthood. prereq: PSY 1003 or instructor consent

PSY 3381. Adult Development and Aging. ( 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) Change and continuity in physiological, psychological, and sociocultural development in early, middle, and late adulthood; theories and research on effects of demographics, cohort, race, ethnicity, gender, culture, family, friends, work, health, education, housing, public policies; dying, grief, bereavement. prereq: PSY 1003 or instructor consent
PSY 3445. Transpersonal Psychology. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Branch of psychology that studies spiritual and transcendental experiences. Concerned with the nature of being, it recognizes potential for a variety of states of consciousness; it acknowledges developmental psychology and draws further insights from the spiritual dimensions of human beings. Lab fee. prereq: 1003 or instructor consent

PSY 3520. Introduction to Industrial/Organizational Psychology. (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to the field of industrial/organizational psychology. Major content areas within the field will be covered, including selection, training, performance evaluation, motivation, work stress, organizational culture, teams, and leadership. prereq: 1003 or instructor consent

PSY 3524. Basic Helping Skills. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Rationale for and practice of basic skills needed for effective interpersonal helping.

PSY 3525. Behavior Analysis in the Workplace. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Introduction to performance management in the context of understanding workplace behavior using a non-traditional approach to management, based on principles derived from the field of behavior analysis. Major content areas within the field will be covered, including measurement of performance and results of performance; analysis of performance data and environments in which performance occurs; and the design, implementation, and evaluation of practical solutions to produce positive, effective workplace performance change. prereq: PSY 1003 or instructor consent

PSY 3501. Psychology of Personal Development. (3 cr.; A-F or Audit; Periodic Fall & Spring) Focuses on discovery of self and spiritual journey. Examines personal development by exploring ways to change, grow, and achieve creative potential. Individual and group counseling experiences required to increase self-awareness and self-knowledge. prereq: 1003 or instructor consent

PSY 3511. Learning and Behavior. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Study of basic learning and behavior processes including the evolution of behavior, pavlovian conditioning, instrumental learning, and elementary cognitive processes. prereq: 1003 or instructor consent

PSY 3513. Applied Behavior Analysis and Behavior Change. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Overview of diverse topics and application of the principles of the science of behavior known as behavior analysis. The philosophical system known as behaviorism that underlies this area of study will be explored, as well as the application of behavioral principles to a number of areas of society, including interpersonal relationships, parenting, clinical and behavioral treatments for persons with intellectual and other disabilities, business and management, animal behavior, health, sustainability, and more. Students will learn techniques for utilizing the principles of behavior in their own lives, conducting functional behavior assessments, as well as the social benefits associated with the incorporation of behavioral principles into educational, rehabilitative, organizational, and other settings. prereq: 1003

PSY 3521. Cognition. (4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) An overview of cognitive processes, using historical, philosophical, biological, and experimental perspectives. Course topics include attention, perception, knowledge representation memory, language, thinking, reasoning, and decision-making. prereq: 1003 or instructor consent

PSY 3561. Psychology of Language. (3 cr.; A-F or Audit; Periodic Fall) An overview of the psycholinguistic aspects of language, including the evolution of behavior, pavlovian conditioning, instrumental learning, and elementary cognitive processes. prereq: 1003 or instructor consent

PSY 3569. Sensation and Perception. (4 cr.; A-F or Audit; Every Fall & Spring) An introduction to the basic psychophysical theories and methods used to understand how the senses convey information to the brain and how the brain processes that information. prereq: 1003 or instructor consent

PSY 3701. Personnel Psychology. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to personnel psychology. Testing, selection, performance appraisal, job analysis, job evaluation, validity issues in organizational settings, discrimination, and affirmative action programs. prereq: PSY 1003 or instructor consent

PSY 3707. Organizational Psychology. (3 cr.; A-F or Audit; Every Fall & Spring) Overview of organizational topics within industrial/organizational psychology. Leadership, job satisfaction, motivation theories, goal setting, organizational behavior, organizational development, and industrial relations. prereq: PSY 1003 or instructor consent

PSY 3866. Honors Project. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer) Advanced project demonstrating either the application of psychological principles or an empirical investigation proposed and conducted by the student. Project or empirical investigation must be based on theoretical and research foundations. A psychology faculty advisor and a written and/or oral report is required. prereq: psychology major, 3.00 GPA overall; 3.25 GPA Psychology

PSY 3899. Directed Instruction. (1-4 cr.; Student Option; Every Fall & Spring) Students work with department faculty in planning and helping teach an undergraduate course. prereq: instructor consent

PSY 3991. Projects in Psychology. (1-4 cr.; S-N or Audit; Every Fall & Spring) Supervised practical experience in any area of psychology, including the application of psychological principles and techniques. Written report required. prereq: psychology major or minor, instructor consent

PSY 3994. Directed Research in Psychology. (1-8 cr.; A-F or Audit; Every Fall, Spring & Summer) Research problem in psychology chosen by either the instructor or the student. Written research report required. prereq: psychology major or minor, instructor consent

PSY 3996. Pre-Professional Field Placement. (1-4 cr.; S-N only; Every Fall, Spring & Summer) Preprofessional field placement. For students wishing additional internship experience. Requires additional 3 hours per week of supervised experience on site for each credit. Must be taken with Psy 3011 Internship in Psychology. prereq: 3010, 3011, instructor consent

PSY 4121. Foundations of Clinical Psychology. (3 cr.; A-F or Audit; Periodic Spring) An overview of the clinical psychology as well as contemporary issues and trends within the field. Emphasizes areas in which clinical psychologists are particularly involved, including assessment, treatment, and clinical research. prereq: PSY 3121 or instructor consent, no grad credit

PSY 4500. Health Psychology. (3 cr.; A-F or Audit; Periodic Spring) Concepts, issues, and methods of health psychology; health maintenance and illness prevention integrating biological, psychological, and social factors; utilization of health psychological assessments; and interdisciplinary aspects of health psychology. prereq: 1003, min 60 cr or instructor consent

PSY 5021. Advanced Developmental Psychology. (3 cr.; A-F or Audit; Every Fall) Course format involved reading and discussion of reviews and journal articles about theories, research methodology, and topics central to the scientific study of human development from conception through adulthood. The role of theory as a guide for research and practice, and classical as well as contemporary theories will be examined. Normative changes and individual differences will be examined. Theoretical frameworks in the domains of social, cognitive, language, and temperament/personality development will be examined. prereq: PSY graduate student or instructor consent

PSY 5052. Advanced Statistics I. (3 cr.; A-F or Audit; Every Fall) Advanced statistics used for experimental and correlational research in psychology; analyze data from simple and complex research designs analysis of variance and linear regression techniques; hypothesis testing; nonparametric statistics; assumptions of tests and diagnosis of assumption violations;
 interpretations of results; use of common statistical software (e.g., SPSS or R). prereq: Math placement level 4 or MACT 23 or higher or graduate student in psychology or instructor consent required.

**PSY 5111. Advanced Personality Science and Research.** (3 cr.; A-F or Audit; Spring Odd Year)
Modern personality theory and the empirical research that supports it; emphasis on major issues that confront personality psychologists in the conceptualization and assessment of personality; relationship between personality and consequential outcomes (such as mental illness, physical health, interpersonal relationship quality, job performance, etc.); mixed designs for conducting research on interactions between traits and experimentally manipulated conditions. pre-req: Psychology graduate student or instructor consent

**PSY 5120. Career and Lifestyle Development.** (2 cr.; A-F or Audit; Every Fall)
Overview of career development and decision theories related to life planning and career choices. Methods and techniques involved in the career counseling process. prereq: Psychology graduate student or instructor consent

**PSY 5121. Psychopathology Over the Lifespan.** (3 cr.; A-F or Audit; Every Fall)
Psychopathology from integrative biopsychosocial and developmental psychopathology perspectives; adult and child psychopathologies including symptomatology, prevalence, etiological evidence, typical course and prognosis, associated features, cultural and social considerations, comorbidity and differential diagnosis. prereq: psychology graduate student or instructor consent

**PSY 5130. Evolutionary Psychology.** (3 cr.; A-F or Audit; Fall Odd Year)
Evolution and the theory of natural selection as it applies to behavioral processes, e.g., survival, mating strategies, parenting and family, cooperation and conflict. prereq: psychology graduate student or instructor consent

**PSY 5131. Mind-Body Connection.** (3 cr.; A-F or Audit; Every Fall & Spring)
Examination of interface between biological and psychological development associated with risks for substance abuse, depression, and conduct disorders; potential commonality of mechanisms. Topics may include communication between brain and endocrine systems, evolution of the brain, homosexuality, psychoneuroimmunology, and psychopharmacology.

**PSY 5155. Forensic Psychology.** (3 cr.; A-F or Audit; Periodic Spring)
Examination of interface between biological and psychological development associated with risks for substance abuse, depression, and conduct disorders; potential commonality of mechanisms. Topics may include communication between brain and endocrine systems, evolution of the brain, homosexuality, psychoneuroimmunology, and psychopharmacology.

**PSY 5401. Advanced Social Psychology.** (3 cr.; A-F or Audit; Every Fall & Spring)
Examination of core content areas and topics within experimental social psychology with a focus on application within both clinical and industrial/organizational psychology. Topics include attitude formation and attitude change, attribution theory, the self, conformity, prejudice, aggression, and prosocial behavior. prereq: psychology grad student or instructor consent; credit will not be granted if already received for 3201

**PSY 5500. Behavioral Approaches to Worker Wellbeing.** (3 cr.; A-F or Audit; Periodic Fall & Spring)
Introduces factors contributing to total worker wellbeing and focuses on the work environments influence on health behavior. Emphasizes integrated approach to health protection and health promotion. Students will learn to design/redesign the work environment and to implement individual and organizational level interventions to overcome barriers and support successful health behavior change. Total worker wellbeing addresses issues such as stress, work/life balance, job satisfaction, safety, higher risk workers, optimal wellbeing, changing workforce demographics, management and leadership commitment, and injury prevention. Students will learn about the benefits integrated programs can have for both employees and employers, empirical evidence, workplace policies, supportive research, and real world examples. Students will engage in self-reflection of personal wellbeing and will design an empirical intervention-based research study to promote health behavior or reduce health risks. pre-req: Psy grad student or instructor consent

**PSY 5621. Cognition and Emotion.** (3 cr.; A-F or Audit; Every Fall)
Students in this course will read and discuss scholarly reviews and journal articles on theories, research methodology, and topics central to the scientific study of human cognition, emotion, and their applications. There will be discussions on the models of cognitive (perception, memory, language, thinking, and reasoning) and emotional processes and their interrelatedness. Consideration will be given to how these contemporary models are developed and evaluated through empirical studies. Finally, how these theoretical models can be applied to educational, clinical, legal, and workplace settings will be examined. prereq: psychology grad student or instructor consent

**PSY 5631. Biological Bases of Behavior.** (3 cr.; A-F or Audit; Every Fall)
Understanding how communication within the body (neuronal, endocrinological, immunological) affects behavior and psychological processes and how these systems interact to influence these processes. Examining how perturbations within these systems lead to mental illness and/or problematic behaviors. How psychoactive drugs affect these systems, with respect to clinical treatment and abuse. The neurological mechanisms of reward and drug dependence (withdrawal, cravings) will be investigated. prereq: psychology grad student or instructor consent

**PSY 5701. Advanced Personnel Psychology.** (3 cr.; A-F or Audit; Every Fall & Spring)
Students will apply theories and research finding to address issues of personnel recruitment, selection, and classification in the workplace. prereq: psychology grad student or instructor consent; credit will not be granted if already received for 3701

**PSY 5702. Advanced Organizational Psychology.** (3 cr.; A-F or Audit; Every Fall & Spring)
This course covers core content in organizational psychology, with a focus on understanding of research findings to enhance organizational functioning and employee well-being. Topics include employee motivation, job attitudes, work stress, teams, leadership, and organizational justice and culture. prereq: psychology grad student or instructor consent; credit will not be granted if already received for 3707

**PSY 8021. Research Methods and Evaluation.** (3 cr.; A-F or Audit; Every Spring)
Examination of quasi-experimental and experimental designs within psychological science. The course will provide comprehensive coverage of the assessment of reliability and validity of measures, methods, and research designs to facilitate the development of a research proposal. A wide variety of quantitative and qualitative research designs, measurement techniques, and methods will be described and evaluated in terms of internal, external, construct, and statistical conclusion validity. prereq: Grade of C or higher in PSY 5052, in an equivalent graduate-level statistics course, or in an undergraduate research methods course in a social science discipline.

**PSY 8052. Advanced Statistics II.** (3 cr.; A-F or Audit; Every Spring)
Advanced statistics used for experimental and correlational research in psychology; analyze data using advanced univariate, basic multivariate, and meta-analytic techniques; assumptions of test; diagnosis of assumption violations; interpretation of results; use of common statistical software (e.g., SPSS or R). prereq: 5052 with a grade of B or better

**PSY 8097. Clinical-Counseling Practicum.** (3 cr.; A-F or Audit; Every Spring)
Supervised counseling practice experience within the University setting. Emphasis is on developing individual and group counseling skills. prereq: Clinical counseling track psychology graduate student

**PSY 8099. Research Project in Psychology.** (3 cr. [max 6 cr.]; S-N or Audit; Every Fall & Spring)
This course provides a capstone experience for students to integrate all they have learned in order to produce scholarly work. Under the guidance of a faculty advisor, students will plan, design, conduct, and present an original project. prereq: psychology grad student
PSY 8103. Introduction to Graduate Studies. (0 cr.; S-N or Audit; Every Fall)
This course will orient new students to key facets of graduate studies in the Master's in Psychological Science Program. Program expectations, requirements, and timelines will be clarified to enable students to make progress in formulating goals in their chosen tracks. This course will provide students with a basis for academic collaboration and professional development by facilitating student interactions with peers and the faculty in psychology. prereq: graduate psychology student

PSY 8197. Clinical Counseling Internship. (3 cr.; [max 6 cr.]; S-N or Audit; Every Fall & Spring)
Supervised clinical work in a professional psychological services setting. Psychological assessment and clinical intervention are emphasized. prereq: 8097 and instructor consent

PSY 8221. Individual Adult and Group Therapy/Counseling. (3 cr.; A-F or Audit; Every Spring)
This course provides an overview of a variety of individual and group therapy models and techniques utilized with adults. Evidence-based techniques and empirically supported treatments will be emphasized along with their application to specific psychological diagnoses. prereq: Clinical counseling track psychology graduate student or instructor consent

PSY 8223. Child, Adolescent, and Family Therapy. (3 cr.; A-F or Audit; Every Fall & Spring)
Individual child and adolescent psychological intervention models and techniques as well as a variety of family therapy models and techniques will be reviewed, emphasizing those with demonstrated empirical effectiveness. Students will be introduced to the provision of effective youth and family counseling approaches in preparation for practicum experience. prereq: Clinical counseling track psychology graduate student

PSY 8224. Clinical Treatment Planning. (3 cr.; A-F or Audit; Every Fall & Spring)
This course provides an overview of methods and strategies of evidence-based clinical treatment planning. Identification and evaluation of measurable process and outcome goals are emphasized. Treatment planning will target specific psychological diagnoses for adults and children, and various modalities, as well as crisis intervention/counseling. prereq: Clinical counseling track psychology graduate student or instructor consent

PSY 8231. Assessment I: Foundations and Cognitive Assessment. (3 cr.; A-F or Audit; Every Fall)
This course provides an overview of basic psychometric issues, test administration, and cognitive assessment. It covers fundamental issues in evidence-based assessment and the development of competent administration and interpretation skills of common cognitive assessments. prereq: Clinical counseling track psychology grad student or instructor consent

PSY 8232. Assessment II. (3 cr.; A-F or Audit; Every Spring)
Building on content from Assessment I, this course applies concepts of psychological testing and measurement to the assessment of specific clinical syndromes and personality through objective personality tests, behavioral observations, symptom checklists, rating forms and structured diagnostic interviewing. Students will learn to appropriately use and interpret results from such measures in the course of clinical/counseling practice. Issue of clinical judgment and controversies concerning common assessment approaches will be covered. prereq: 8231 and instructor consent

PSY 8301. Multicultural Foundations in Clinical/Counseling Psychology. (3 cr.; A-F or Audit; Every Fall & Summer)
This course explores the complexities of culture in practice. The focus is on becoming culturally responsive counselors and therapists. Within evidence-based practice, this course provides guidelines for integrating cultural considerations into the theory and practice of assessment, diagnosis, and therapeutic interventions. prereq: Clinical counseling track psychology graduate student or instructor consent

PSY 8302. Ethical and Legal Issues in Therapy and Counseling. (3 cr.; A-F or Audit; Every Spring)
This course covers approaches to ethical decision making of relevance to work as a psychologist. Codes of ethical conduct, as well as legal issues related to research and practice are covered. Students will learn about important historical cases illustrating ethical and legal issues in the field. prereq: Clinical counseling track psychology graduate student or instructor consent

PSY 8333. FTE: Master's. (1 cr.; No Grade Associated; Periodic Fall & Spring)
(no description) prereq: master's student, adviser and DGS consent

PSY 8701. Performance Evaluation and Management. (3 cr.; A-F or Audit; Every Fall & Spring)
This course centers on the methods of evaluating performance and on actions taken with employees based upon such appraisals. Theoretical understanding and familiarity with research on interpersonal judgment and perception, criterion theory and development, rating scale construction and use, sources of information, and effective communication will help students in this course develop skills in designing performance appraisal and feedback systems which meet organizational needs while enhancing employee motivation. prereq: psychology graduate student or instructor consent

PSY 8705. Organizational Systems & Development. (3 cr.; A-F or Audit; Every Fall & Spring)
This course is designed to cover topics central to organizational systems and development, including classical and contemporary theories of organizations, organizational structure, organizational design, technology, and cross-cultural differences and issues. Students will learn how to integrate theory, research findings, and applied techniques to help organizations adapt within the ever-changing local and global environment. prereq: psychology graduate student or instructor consent

PSY 8706. Personnel Training & Development. (3 cr.; A-F or Audit; Every Fall & Spring)
This course is designed to cover topics central to personnel training and development. This course requires the integration of theories, tools, concepts, and techniques learned in the classroom with an application in a "real" organization. Students will learn how to analyze performance deficiencies in order to determine whether training is required and, if so, how to design and implement effective training to help fix performance problems. Basic phenomena of learning, various training and development approaches commonly used in business and industry, and design issues necessary for planning evaluation and improvement strategies will be covered. prereq: psychology graduate student or instructor consent

PSY 8991. Graduate Applied Projects in Psychology. (1-2 cr.; Student Option; Every Fall & Spring)
Under faculty supervision, students will work on applied psychology projects. prereq: Psychology graduate student, instructor consent

Russian (RUSS)

RUSS 1101. Beginning Russian I. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Grammar, reading, and conversation for students with no previous knowledge of Russian. prereq: Little or no prior formal study of this language, or instructor consent

RUSS 1102. Beginning Russian II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Grammar, reading, and conversation. prereq: 1101 or equiv or instructor consent

RUSS 2316. 19th Century Russian Literature in Translation: Dostoevsky, Gogol and Turgenev. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Spring)
This course examines texts by celebrated Russian prose authors from the nineteenth century. The short stories and novels of authors such as Nikolai Gogol, Ivan Turgenev and Feodor Dostoevsky confront their readers with a set of concerns that still remain relevant today. Through close readings and literary analysis, the course will offer students an opportunity to develop their abilities as writers and critical thinkers. In writing assignments, students will develop their abilities to present extended analyses and coherent argumentative strategies, while exploring some of the most significant developments in Russian literary culture. Taught in English.

RUSS 3402. 20th Century Russian Literature in Translation: From Tumult & Utopian Vision to State and Dissident Art. (GLOBAL
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Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
SW 4271. Women and Social Policy. (2 cr.; A-F or Audit; Periodic Spring & Summer)

Policies affecting the well-being of women; strategies for better meeting women's needs. Focuses on policies that affect women's roles and statuses within the domestic unit and within larger economic and political spheres. Pre-req: Minimum 60 credits or instructor consent; no grad credit.

SW 4280. Substance Use Trends and Interventions in Social Work. (SOC SCI; 3 cr.; Student Option; Every Fall, Spring & Summer)

A multi-level systems perspective in examining the effects of substance use and abuse on individuals, families and other populations. Topics will include: epidemiology, etiology, current trends, screening, assessment, diagnosis, treatment options, specialized populations and various social work practice areas. Pre-req: Minimum 60 credits.

SW 5032. Child Welfare and the Law. (2 cr.; A-F only; Every Fall, Spring & Summer)

Intensive advanced course in the federal, state, and tribal laws and court processes regulating child welfare practice. Includes laws and procedures and the role of the social worker in legal proceedings. Prereq: Master of social work student or instructor consent.

SW 5061. Computers in the Human Services. (1-2 cr.; Student Option; Periodic Fall, Spring & Summer)

Overview of computers in the human services, including word processing, spreadsheets, databases, communication, and internet. Prereq: Junior or senior or grad student or instructor consent.

SW 5091. Independent Study. (1-4 cr. [max 8 cr.]; Student Option; Every Fall, Spring & Summer)

Directed reading, research, or other experiences leading to presentation of a report. Prereq: Instructor consent.

SW 5095. Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 48 cr.]; Student Option; Periodic Fall, Spring & Summer)

Proseminar on contemporary topics of concern to students and faculty. Topics announced in Class Schedule.

SW 5096. Special Project. (1-4 cr. [max 8 cr.]; S-N or Audit; Every Fall, Spring & Summer)

Approval of faculty sponsor and field coordinator required to do a project in generalist or advanced generalist social work practice. Project may closely coordinate with another course or may be an independent area of interest. Prereq: Instructor consent.

SW 5101. Human Behavior in the Social Environment. (3 cr.; A-F only; Every Fall)

Overview of social psychological and social systems concepts. Applications of concepts to social work and human service issues.

Focus on individuals, human development, families, groups, organizations, communities, and society/culture. Prereq: MSW student or instructor consent.

SW 5111. Grant Writing in the Human Services. (1-2 cr.; A-F only; Periodic Spring & Summer)

Step-by-step development of grant planning and grant writing. Sources of grants: private foundations and public agencies. Needs assessment methodologies, budgeting, and program evaluation. Prereq: Jr or Sr or Grad or instructor consent.

SW 5120. Cross-Cultural Exploration Through Learning Circles. (1 cr. [max 2 cr.]; S-N only: Every Fall & Spring)

In a small group (learning circle) students will learn about diverse groups, cross-cultural interactions and explore the concepts of individual and organizational cultural competence through the use of interactive and experimental methods, and applying new knowledge to practice in social work. Prereq: Admission into MSW, 8100 or instructor consent.

SW 5144. Grief, Loss and Coping in Social Work Practice. (2 cr.; A-F or Audit; Periodic Fall, Spring & Summer)

Students will gain conceptual understanding, advanced assessment and intervention skills, and competencies relative to grief, loss and coping and the clinical impact on client systems. Theory and perspectives are provided from various disciplines, and a spectrum of multicultural influences, with an emphasis on person-in-environment. Materials from lay people, social work and other professional disciplines are presented and critiqued. Prereq: Social Work graduate student.

SW 5201. Social Welfare Policy. (3 cr.; A-F only; Every Fall)

Historical development of field of social welfare in the United States and emergence of social work profession. Social policy analysis techniques and ways to influence social policy and vulnerable/minority issues. Prereq: MSW student or instructor consent.

SW 5215. Trauma Informed Social Work Practice with Children and Adolescents. (2 cr.; A-F or Audit; Periodic Spring & Summer)

Course addresses the impact of psychological trauma on children and adolescents, particularly those in the child welfare system. An overview of screening, assessment and intervention strategies to address the mental health needs of children affected by trauma is provided, as well as guidelines informed practice. Prereq: Social Work graduate student.

SW 5222. Intervention in Family Violence. (2 cr.; A-F only; Periodic Fall & Summer)

Current theory, research, and practice in field of family violence. Multidisciplinary assessment and intervention skills for working with families with diverse backgrounds. Prereq: Social Work grad student or instructor consent.

SW 5271. Women and Social Policy. (2 cr.; A-F only; Periodic Fall & Spring)

Policies affecting the well-being of women; strategies for better meeting women's needs. Focuses on policies that affect women's roles and statuses within the domestic unit and within larger economic and political spheres. Prereq: Jr or Sr or Grad or instructor consent.

SW 5280. Substance Use Trends and Interventions in Social Work. (2 cr.; Student Option; Every Fall, Spring & Summer)

A multi-level systems perspective in examining the effects of alcohol problems on individuals, families and other populations. Topics will include: epidemiology, etiology, screening, assessment, diagnosis, treatment options, specialized populations, and various social work practice areas. Credit will not be granted if already received for SW 4280.

SW 5990. Pre-Field Work. (0 cr.; No Grade Associated; Every Fall & Summer)

This 0 credit course is designed to cover the expense of criminal background checks required of all MSW students before they can enroll in their initial field placement with our program (Field I for Standard Students and Field II for Advanced Students).

SW 8031. Advanced Practice in Child Welfare. (3 cr.; A-F only; Every Spring)

Advanced skill development in assessment, intervention, and evaluation in relationship to direct child welfare social work practice. Prereq: 5032, 8441.

SW 8051. School Social Work. (1-2 cr.; A-F only; Periodic Fall & Spring)

Overview of social work practice in educational settings, roles and functions of social workers within a complex ecological system, and skills and knowledge needed by social workers in a school setting. Prereq: Soc work grad student or instructor consent.

SW 8070. Evidence-Based Practice in Clinical Social Work. (3 cr.; Student Option; Every Spring & Summer)

Students will be presented with complex case situations and asked to draw on knowledge and skills to best address these situations from initial assessment through intervention and termination. Students will gain knowledge of specific modalities in evidence-based interventions and best practice research, with a focus on contextual and appropriate practice behaviors for skilled practice.

SW 8100. Social Work with Diverse Populations. (3 cr.; A-F only; Every Fall & Spring)

Examines societal issues generated by systemic discrimination and explores methods for reducing discrimination. Particular focus on advanced social work practice with diverse populations. Prereq: MSW students or instructor consent.

SW 8101. Introduction to Research. (2 cr.; A-F only; Every Spring)
Introduction to social science research and its applications to social work and social welfare. 
prereq: SW Grad student or instructor consent

SW 8102. Advanced Research. (3 cr.; A-F only; Every Fall & Summer) 
Application of social science knowledge and skills to evaluate practice and to conduct community-based research and program evaluation projects. Develop a research proposal. prereq: 8101 or admission to advanced standing MSW program

SW 8105. MSW Portfolio and Final Oral Seminar. (0 cr.; S-N or Audit; Every Spring & Summer) 
Seminar provides support for completing MSW portfolio and final oral exam. prereq: 8102

SW 8106. Child Welfare Practice with African American Families. (2 cr.; A-F or Audit; Every Fall & Spring) 
Students will learn about African American family strengths, values and norms; and about the social history and current status of the overrepresentation of African Americans in the child welfare system. They will also explore best practice in providing child welfare services to African American families. prereq: 8100 or instructor consent

SW 8111. Individual, Family and Group Practice I. (3 cr.; A-F only; Every Fall) 
Overview of generalist social work practice, ethics, ecological perspective, and problem-solving model. Application to individuals, families, and groups to diverse populations. Development of counseling skills. prereq: SW grad student or instructor consent

SW 8112. Organization and Community Practice I. (3 cr.; A-F only; Every Spring) 
Using a problem-solving model and the ecological and strengths perspectives, students develop assessment and interventions skills for effective practice with organizations and community. Topics include using supervision, facilitating meetings, advocacy, cultural competence, and promoting organizational and community change. prereq: 8111

SW 8235. American Indians and Social Policy. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) 
Informs human service providers of policies affecting American Indians, including relationships of tribal governments with the United States and Minnesota governments, the interface between Indian and non-Indian service delivery systems, and Indian culture and politics. prereq: 5201 or advanced standing MSW program or instructor consent; credit will not be granted if already received for 5235.

SW 8331. Organization and Community Practice II. (3 cr.; A-F only; Every Fall) 
Prepares students for advanced practice in organizations and communities. It provides a framework for assessing and intervening in organizations and communities using an asset-based and problem-solving approach. Specific strategies and tactics for strengthening organizations and communities are addressed. prereq: 5101, 8112 or Advanced Standing in MSW program

SW 8332. Advanced Practice in Administration and Community Development. (2-3 cr.; A-F only; Every Spring) 
This course focuses on application of advanced knowledge and skills essential for understanding macro practice. Analysis of organizations and communities is required. Emphasis will be on analysis of complex social problems and the development of organizational and community solutions. prereq: 8331

SW 8333. FTE: Master's. (1 cr.; No Grade Associated; Every Fall & Spring) 
(No description) prereq: Master's student, adviser and DGS consent

SW 8441. Individual, Family and Group Practice II. (3 cr.; A-F only; Every Fall) 
Examines a range of social work practice theories and their application to practice with individuals, families, and groups. Advanced skills in assessment and intervention in addressing complex problems with a focus on micro practice. Application to diverse populations and settings. prereq: 5101, 8112 or advanced standing MSW student

SW 8443. Advanced Practice in Mental Health. (3 cr.; A-F only; Every Spring) 
Advanced skill development in direct practice social work assessment, intervention, and evaluation in relationship to mental health issues. prereq: 8441 concurrent registration is required

SW 8771. Health in American Indian Communities. (2 cr.; A-F only; Every Fall & Spring) 
Introduction to historical and contemporary concepts of American Indian health. Policy issues, cultural and sensitivity knowledge, and practice methods with American Indian clients and communities at micro, mezzo, and macro levels of intervention. prereq: 8235

SW 8801. Field Placement I. (3-6 cr.; S-N only; Every Fall, Spring & Summer) 
Practicum experience with emphasis on developing knowledge and skill base for “beginning generalist” practice in a community agency. Concurrent seminar assists students in integrating classroom theories and intervention methodologies with field experiences. Application to diverse populations. prereq: 8111, 8112; SW Grad student, instructor consent

SW 8802. Field Placement II. (3-8 cr.; S-N only; Every Fall, Spring & Summer) 
Developing knowledge and skill base for “advanced generalist” practice in a community agency. Concurrent seminar focuses on integrating classroom theories and intervention methodologies with client systems at micro, mezzo, and macro levels of practice. Attention to vulnerable/minority issues, prereq: concurrent registration in 8031 or 8332 or 8443 or 8544, SW Grad Student and instructor consent

SW 8881. Dynamics of American Indian Families. (2 cr.; A-F only; Every Fall & Spring) 
Introduction to traditional and contemporary concepts relating to American Indian families. Public policy, social problems, cultural strengths, conflicts, and culturally competent social work practice. prereq: 8235 or instructor consent

SW 8891. Practice in the American Indian Community. (2-4 cr.; S-N only; Periodic Spring & Summer) 
Gives MSW students supervised direct practice experience in the American Indian community. Application of cultural knowledge and culturally competent practice skills. prereq: Soc work grad student, 8771 or 8881, instructor consent

Sociology (SOC)

SOC 1080. Development of Social Selves. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring) 
Examines how the self develops. The primary focus is the socialization process, a process which continues throughout the life course. Special attention will be given to childhood and adolescent socialization. How do we learn? How do we understand behavior? What are the consequences of inadequate socialization?

SOC 1101. Introduction to Sociology. (SOC SCI;DIVERSITY; 4 cr.; A-F or Audit; Every Fall & Spring) 
Introduction to sociological concepts and their application.

SOC 1201. Sociology of the Family. (SOC SCI;DIVERSITY; 3 cr.; A-F or Audit; Periodic Fall & Spring) 
The family as a basic social institution; similarities and variations in family systems, their interrelationships with other institutions, and patterns of continuity and change.

SOC 2155. Introduction to Research Methods and Analysis. (4 cr.; A-F or Audit; Every Fall & Spring) 
Principles/practice of research design, sampling, data collection including field observation/surveys. Data management, analysis, and reporting of quantitative/qualitative data. Ethics/administration in sociological research. Introduction to SPSS statistical software. Lab

SOC 3155. Quantitative Research Methods and Analysis. (4 cr.; A-F or Audit; Every Fall & Spring) 
Descriptive statistics. Measures of central tendency, deviation, association. Inferential statistics focusing on probability and hypothesis testing. T-tests, Chi-square tests, analysis of variance, measures of association, introduction to statistical control. Statistical software (SPSS) used to analyze sociological data. Lab. prereq: 2155, crm major or soc major or URS major, min 30 cr

SOC 3156. Qualitative Research Methods and Analysis. (4 cr.; A-F or Audit; Every Fall) 
Application of qualitative research methods to study of social structures. Emphasizes field techniques, secondary data analysis, and interpretation. Lab prereq: (2155 or anth major
SOC 3306. Deviance. (3 cr.; A-F or Audit; Periodic Fall & Spring) Behaviors, beliefs, and physical characteristics defined as deviant; legal and other formal and informal reactions to deviance; subjective and objective effects of being defined as deviant. prereq: 1101 or CRIM 1301, min 15 cr.

SOC 3330. The American Civil Rights Movement. (SOC SCI,CDIVERSITY; 3 cr.; A-F or Audit; Every Fall) Examination of theories and research relating to the American civil rights movement, including precursors and influence on subsequent social movements. Role of organization, resources, leadership, recruitment, ideology and consciousness, gender, social control, and counter-movements.

SOC 3701. Social Psychology. (SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring) Theory and research issues regarding relation of individual to society. Socialization, effects of social organization and disorganization, and interpersonal interaction. prereq: Min 30 cr or instructor consent

SOC 3821. Sociology of Community. (3 cr.; A-F or Audit; Periodic Fall & Spring) Theoretical orientations and empirical investigations of community structure, processes, conflict, and change. Community components and types; community development strategies reviewed and applied. prereq: 1101, 30 cr

SOC 3831. Organizations and Society. (4 cr.; A-F or Audit; Periodic Fall & Spring) Sociological examination of structure and processes of public and private formal organizations and patterns of adaptation to external social environments. Role of voluntary organizations in society. prereq: 60 cr or instructor consent

SOC 3901. Social Change and Social Policy. (3 cr.; A-F or Audit; Periodic Fall & Spring) Social change and maintenance forces as they affect social life. Emphasis on social theory and research along with formation and implementation of social policy leading to both change and maintenance. prereq: 30 cr or instructor consent

SOC 3945. Social Stratification. (3 cr.; A-F or Audit; Every Fall & Spring) Theories and research about the effects of economic inequality in people's lives. Social class formation and the effects of institutionalized power structures. Intersection of social class, gender and race/ethnicity. Primary focus on the United States but with international comparisons. prereq: 1101 or CRIM 1301 or CSI 1101 or Anth 1604, min 30 cr or instructor consent

SOC 4111. Sociological Theory. (4 cr.; A-F or Audit; Every Fall & Spring) Analysis of classical and contemporary sociological theory. Major theorists, including Durkheim, Weber, and Marx; major paradigms and their importance to sociological thought. prereq: 1101, 30 cr, no grad credit; credit will not be granted if already received for SOC 2111.

SOC 4370. Sociology of Mental Health and Illness. (3 cr.; A-F or Audit; Periodic Fall & Spring) Examines mental health and illness from multiple sociological perspectives; particular emphasis placed on contemporary United States. Topics include theories and alternative understandings, differences in cultural perspectives, social determinants, deterrents, response to and consequences of mental illness and institutional contexts of mental illness and criminal justice. prereq: 60 credits or instructor consent; no grad credit

SOC 4587. Internship Preparation. (1 cr.; A-F only; Every Fall & Spring) Introduction to internship by learning about internship expectations, developing internship objectives, exploring internship opportunities, and identifying potential internship sites. After successfully completing SOC 4587, a student must wait at least one semester before registering for SOC 4597, prereq: CRIM majors - CRIM 1301, 2311, SOC 2155; SOC majors - SOC 1101, 2155; min 60 cr, no grad credit

SOC 4597. Internship. (3-8 cr.; S-N only; Every Fall, Spring & Summer) Supervised internship of at least 300 hours in a setting related to academic preparation and career interests. prereq: Internship coordinator consent, sociology or criminology major, 4587, WRIT 31xx; no grad credit

SOC 4680. Environmental Sociology. (SUSTAIN; 3 cr.; A-F or Audit; Spring Odd Year) Examines the relationship between humans and the natural environment, including the role of science, technology, economics, religion, and culture. Emphasis on the social justice implications of environmental issues and contemporary topics, such as global warming and sustainable agriculture and energy. Considers the diverse positions and actions of environmental movements and possible solutions to environmental problems. prereq: 30 cr or grad student or instructor consent

SOC 4910. Teaching Assistantship in Sociology. (1-3 cr.; A-F only; Every Fall & Spring) Practical experience in teaching-related activities in sociology courses. prereq: 60 cr, instructor consent; no grad credit; maximum 3 credits allowed between SOC 4910, 4997 and CRIM 4397, 4910

SOC 4925. Sociology of Rape. (3 cr.; A-F or Audit; Every Spring & Summer) Social, moral, and legal definitions and implications of rape. prereq: 1101 or CRIM 1301 or CSI 1101 or Anth 1604 or WS 1300, 60 cr, or instructor consent

SOC 4935. Peace Studies. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course focuses on the field of peace, nonviolence, and conflict resolution studies. ?? We will study peacemaking theories and practices at all levels - from the interpersonal to the international. This includes the field of mediation, the history of nonviolent resistance, and contemporary examples of nonviolent political action. Throughout the course, we will consider how gender, race/ethnicity, economics, religion, and language influence peace and conflict resolution. You will learn from people in the local community who are actively involved in violence prevention, conflict transformation, and peacemaking. During class exercises and projects, you will practice applying peace theories and methods to current social problems and your life. prereq: 60 cr or grad student or instructor consent

SOC 4947. Sociology of Gender Identities and Systems. (3 cr.; A-F or Audit; Periodic Fall & Spring) Statics and experiences in society through the exploration of gender identities, systems, and social structures. Topics include politics, discrimination, family, education, workplace, popular culture, and changing definitions of gender. Emphasis on the expectations and performance of masculinity/femininity and the intersection of gender, race, and class. Some consideration given to global explorations and international comparisons. prereq: 1101 or CRIM 1301 or CSI 1101 or Anth 1604 or WS 1300, min 60 cr, or grad student or instructor consent

SOC 4949. Race and Ethnic Relations. (3 cr.; A-F or Audit; Periodic Fall & Spring) Overview of race and ethnic relations in America; conditions of major racial and ethnic minorities; formation of racial/ethnic identities, sources of prejudice, discrimination; intergroup conflict; assimilation, persistence of ethnicity; intergroup diversity; major racial and ethnic groups; the new immigrants. prereq: 1101 or CRIM 1301 or CSI 1101 or Anth 1604, 60 cr, or instructor consent

SOC 4960. Graveyard Culture. (4 cr.; A-F or Audit; Periodic Summer) Structure and cultural traditions surrounding resting places of the departed, with emphasis on stratification, discrimination, cultural identity, identity tags, and community integration as well as preservation issues, community history, and the business end of cemeteries. Further emphasis on cemeteries in Duluth and surrounding areas within the context of broader movements. Exploring Duluth history becomes an essential part of the course. prereq: Min 30 cr or instructor consent

SOC 4981. Social Movements, Protest and Change. (4 cr.; A-F or Audit; Every Spring) This course provides a study of collective behavior and social movements. The course includes a survey of theories and phenomenon making up the "collective behavior" paradigm from which early studies of social movement were conducted. Here, the focus is on fads, crazes, panics, riots, rumors, and mass hysterias. The bulk of the course is dedicated to the study of the emergence, structure, and dynamics of contemporary social movements and political protest. The range of their investigation extends from research on the dynamics of recruitment within social
Spanish (SPAN)

SPAN 1101. Beginning Spanish I. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Conversation and communicative course for students with little or no previous study of Spanish. Cultivation of the four modalities of language acquisition speaking, listening comprehension, writing, and reading comprehension). Development of intercultural competency. Taught primarily in Spanish. prereq: 1-2 yrs high school Span or 1101 or instructor consent

SPAN 1102. Beginning Spanish II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Conversation and communicative course for students with limited study of Spanish, cultivation of the four modalities of language acquisition (speaking, listening comprehension, writing, and reading comprehension). Development of intercultural competency. Taught primarily in Spanish. prereq: 1-2 yrs high school Span or 1101 or instructor consent

SPAN 1201. Intermediate Spanish I. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Consolidation and enrichment of previously acquired abilities in the Beginning Spanish sequence. Further cultivation of the four modalities of language acquisition (speaking, listening comprehension, writing, and reading comprehension). Emphasis on oral and written production. Further development of intercultural competency as it relates to the diverse cultures of Latino and Spanish-speaking communities around the globe. Taught in Spanish. prereq: 3-4 yrs high school Span or 1102 or instructor consent

SPAN 1202. Intermediate Spanish II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Consolidation and enrichment of previously acquired abilities in Intermediate Spanish. Further cultivation of the four modalities of language acquisition (speaking, listening comprehension, writing, and reading comprehension). Emphasis on oral and written production. Further development of intercultural competency as it relates to the diverse cultures of Latino and Spanish-speaking communities around the globe. Taught in Spanish. prereq: 4 yrs high school Span or 1201 or instructor consent

SPAN 2301. Advanced Spanish. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall)
Development of Spanish literacy within a culturally authentic context. Strong emphasis on academic writing and formal oral and aural communication skills; cultivation of literary and filmic analysis abilities; intensive review of key grammar. Taught in Spanish. prereq: 5 yrs high school Span or 1202 or instructor consent

SPAN 2302. Advanced Spanish II. (COMM & LAN; 4 cr.; A-F or Audit; Every Spring)
Further development of Spanish literacy. Focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent

SPAN 2540. Latino Literatures and Cultures. (CDIVERSITY,HUMANITIES; 4 cr.; A-F or Audit; Every Fall, Spring & Summer)
The study of Latino communities in the United States, from the colonial period to the present. Topics covered include the Spanish legacy in the Southeast and Southwest, Caribbean communities on the East coast, and demographic transition away from major metropolitan areas to the Midwest. Students will read travel narratives, fiction, poetry, and the novel. Aural and verbal histories from Latinos in Minnesota. The course is open to all students and will be taught in English.

SPAN 2550. Globalization and Sustainability in Latin America. (SUSTAIN; 4 cr.; A-F or Audit; Spring & Summer Odd Year)
The study of Latin America's natural resources, their cultural meaning and management across time and recent environmental movements in the region. Special focus on the indigenous practices that promote environmental, economic, political, social and cultural sustainability. The course may focus on Central America, the Caribbean, and Andes, the Southern Cone, the Amazon or any other geopolitical region in Latin America. The course is open to all students and will be taught in English.

SPAN 3020. Advanced Spanish for Business. (4 cr.; A-F or Audit; Periodic Spring)
This class develops students' Spanish language abilities in order to function in business settings domestically and internationally. This course will enhance oral and written presentational skills within commercial and administrative contexts, and will cultivate students' geographic knowledge and cultural competence necessary to perform, interact and interrelate in professional situations and make informed choices in the vast and varied Spanish-speaking world. preq: SPAN 2301

SPAN 3042. Civilization, Cultures and Community in Latin America. (GLOBAL PER,HUMANITIES; 4 cr.; A-F or Audit; Periodic Spring)
Historical overview and survey of key themes of Latin America until the present day. Analysis of key cultural (literary, filmic, artistic, architectural, and musical) texts. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent

SPAN 3044. Civilization, Cultures and Community in Spain. (GLOBAL PER,HUMANITIES; 4 cr.; A-F or Audit; Every Spring)
Historical overview and survey of key themes of the Iberian Peninsula from pre-history until the present day. Analysis of key cultural (literary, filmic, artistic, architectural, and musical) texts. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent

SPAN 3097. Internship. (1-6 cr.; S-N only; Every Fall, Spring & Summer)
Supervised international or domestic internship related to Hispanic Studies or Latin American Studies major. The use of Spanish must be necessary to carry out the internship. preq: Internship coordinator consent, Hispanic Studies or Latin American Studies major, WRIT 31xx, SPAN 2301 with a C or better

SPAN 3894. Language and Culture in Spain - Study Abroad. (GLOBAL PER; 6 cr.; A-F only; Periodic Summer)
Month long summer study abroad program in Salamanca, Spain. Study of Spanish language, literature, art history and culture at the University of Salamanca. Home stay with a Salamanca family. Taught in Spanish. prereq: instructor consent & completion of SPAN 1202 or higher; also visit the UMD Study Abroad office

SPAN 4011. Latin American Prose. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring)
Prose fiction with emphasis on twentieth and twenty-first centuries. Attention also to cultural
background. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4013. Hispanic American Poetry and Drama. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Emphasis on twentieth and twenty-first centuries. Attention also to cultural background. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4017. Latin American Cinema and Culture. (FINE ARTS; 4 cr.; A-F or Audit; Fall Odd Year) Exploration of the production of cinema paired with the analysis of and insight into Latin American cinema and culture. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4018. Latin America From Within. (HUMANITIES; 4 cr.; A-F or Audit; Every Spring) Study of selected Latin American countries: historical, political, cultural, and other defining moments and literary expressions of those moments, with the goal of seeing the country from within. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4019. Seminar: Latin America in the 21st Century. (HUMANITIES; 4 cr.; A-F only; Fall Even Year) A study of longer, newer, or less studied (yet important) literary works, as well as their relevant cultural background. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4022. Medieval and Golden Age Literature and Culture of Spain. (HUMANITIES; 4 cr.; A-F or Audit; Spring Even Year) Survey of Spanish literature from the Middle Ages through the Baroque. Relies on written tradition but will also delve into other types of cultural production (pictorial, sculptural, architectural, etc.). Also reviews current renditions (textual and filmic) of some of the texts. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4027. Contemporary Literature and Culture of Spain. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) The study of twentieth and twenty-first century literature and culture of Spain from the Second Republic until the present day. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4028. Literature and Culture of Spain 16th to the 20th Century. (HUMANITIES; 4 cr.; A-F or Audit; Spring Even Year) Literature and culture (art, film, music, architecture, popular culture) of the Spanish Enlightenment through the twentieth century. Texts will be studied within their historical, political and social contexts and will shed light on the author/composer/artist's ideology vis-a-vis dominant philosophical and political climates. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4030. Cinema and Culture of Spain. (FINE ARTS; 4 cr.; A-F or Audit; Spring Odd Year) Overview of cinema of Spain. Examines a variety of filmic genres. Spanish national identity will be the main axis of inquiry. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4090. Aspects of the Hispanic World. (HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring) Sociopolitical, historical, literary, and cultural events of major importance in Latin America, Spain, or in Latino communities in the United States. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4091. Independent Study. (1-4 cr. [max 8 cr.]; A-F only; Every Fall, Spring & Summer) Students devise programs of reading and research in consultation with instructor to expand upon a topic related to one studied in regular coursework. Strong focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better, instructor consent; no grad credit

SPAN 4095. Special Topics: (Various Titles to be Assigned). (4 cr. [max 12 cr.]; A-F or Audit; Periodic Fall & Spring) Literature and/or culture of Spanish-speaking populations: Spaniards, Latin Americans, or Latinos in the United States. Taught in Spanish. prereq: 2301 with C or better, instructor consent; no grad credit

Special Education (SPED)

SPED 1357. Individuals with Disabilities in Society. (CDIVERSITY; 3 cr.; A-F or Audit; Every Spring) Major types of disabilities and giftedness, including definitions, causes, characteristics, and educational implications. Disability perspectives. Social, legal, and educational considerations of disability issues.

SPED 3103. Infants and Toddlers with Special Needs. (; 4 cr.; A-F or Audit; Every Spring) Causation and development of disabling conditions in infants and toddlers. Effective intervention techniques in a variety of settings involving interagency collaboration and family involvement. Practicum. prereq: Minimum 30 credits

SPED 3105. Young Children with Special Needs: Ages Three-Eight. (; 4 cr.; A-F or Audit; Every Fall) Identification, assessment, and classification of young children with special needs. Effective intervention techniques for use in a variety of settings, emphasizing integration and teaming strategies. Practicum. prereq: instructor consent

SPED 3106. Working with Young Children with Low Incidence Disabilities. (4 cr.; A-F or Audit; Every Fall) Skills and information useful in the provision of quality services for young children with low incidence disabilities. Class sessions and field-based experiences will address supporting young children with low incidence disabilities. prereq: Admitted to UECCH program

SPED 3109. Supporting Social/Emotional Development Birth-8. (; 3 cr.; A-F or Audit; Every Fall) Provides information needed to evaluate and implement behavior change programs that are appropriate for young children who exhibit challenging behaviors. A key element will be functional behavioral assessment procedures and a range of preventative behavioral interventions. prereq: Minimum 30 credits

SPED 3205. Foundations in Early Childhood Assessment. (; 2 cr.; A-F or Audit; Every Fall) This course provides information about informal and formal assessment properties and their application. Included is information about statistical properties inherent in norm referenced tests, the exploration of criterion referenced test, and discussion of informal assessment strategies such as observation and portfolio work. This course is a prerequisite to SPED 3206 Methods in Early Childhood Special Education Assessment. prereq: Admitted to UECCH program

SPED 3206. Methods of Assessment in Early Childhood Special Education. (; 2 cr.; A-F or Audit; Every Fall) This course is the second of two assessment courses in the ECSE licensure requirements. The course expands and builds upon the Foundations of ECSE Assessment (SPEC 3205). In the course students practice administration and implementation of norm- and criterion-referenced assessment tools for young children. Further, participants practice developing assessment reports and corresponding Individualized Family Service Plans (IIFSP) and Individualized Education Plans (IEP). prereq: admitted to UECCH program

SPED 3415. Special Education in the Secondary School. (; 3 cr.; A-F only; Every Fall & Spring) Exploration of topics in exceptionally for pre-service secondary education majors. Topics include universal design, instructional strategies, characteristics of students, special education law, and differentiated instruction.

SPED 4204. Assessment in the General and Special Education Classroom. (4 cr.; A-F or Audit; Every Fall & Spring) Exploration of topics in responsive and responsible assessment of student learning. Candidates will be introduced to use of assessment strategies and making decisions about exceptionally, eligibility, and educational programming. Topics include types of assessment strategies, large-scale and high stakes testing, rubrics, checklists and other evaluative tools and techniques. This course has a 30-hour practicum. prereq:
SPED 4433. admission to IESE program and successful completion of Block One courses and associated field experience or SPED postbac, no grad credit

SPED 4250. Foundations of Autism Spectrum Disorders. (3 or 4 cr.; A-F or Audit; Periodic Summer)
Includes history, definitions, assessment, characteristics, legal aspects, varying perspectives, and etiology of the Autism Spectrum Disorders. prereq: No Grad cr

SPED 4260. Language and Social Skills for Children and Youth with Autism Spectrum Disorders. (3 cr.; A-F or Audit; Periodic Spring)
Specialized instruction in the foundation of language development, social stories, augmented and alternative communication systems, theory of mind, social skill development and play. prereq: 4250 or 5250 and 4270 or 5270; no grad credit

SPED 4270. Methods for Teaching Children and Youth with Autism Spectrum Disorders. (4 cr.; A-F or Audit; Periodic Fall)
In-depth assessment, environmental factors, curricular options, instructional strategies, behavioral programming, material for teaching, sensory integration strategies, IEP/IIIP development and implementation, and technology on the continuum of placements for children and youth with ASD. prereq: 4250 or 5250 or instructor consent, no grad credit

SPED 4280. Assessment of Students with Autism Spectrum Disorders. (2 cr.; A-F or Audit; Fall Even Year)
This course will focus on assessment procedures used by practitioners in the field of special education - specifically in Autism. Students will learn a variety of standardized and informal assessment procedures, referral, evaluation, planning, and programming. Students will also learn to interpret and integrate evaluation results in the planning and programming process in working with students with Autism. prereq: 4250 or 4260 and 4270; no grad credit

SPED 4310. Response to Intervention in the General Education Classroom. (4 cr.; A-F or Audit; Every Fall & Spring)
Understanding the use of the response to intervention (RTI) procedure to identify students with learning disabilities. Use of formal and informal assessment processes for monitoring progress to make decisions about changes in instruction or goals and apply child response data to important educational decisions. Students will identify valid research-based interventions and their application in educational settings. prereq: Admission to IESE program or post bac special education; credit will not be granted if already received for 5310

SPED 4381. Classroom and Behavior Management. (4cr.; A-F or Audit; Every Fall & Spring)
Classroom management and behavior change for P-12 students; identification and assessment of problem behaviors; proactive and reactive strategies for managing disruptive behavior; application of applied behavior analysis to modifying behaviors; legal and ethical issues in behavior change. Concurrent with 5381. Practicum prereq: 4433. Admission to IESE program or postbac sped; no grad credit

SPED 4433. Foundations in Special Education. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Overview of children with disabilities. Special emphasis will be placed on characteristics of exceptional children; the legal aspects of educating students with disabilities; and assessment, instructional, and collaborative strategies. Practicum. prereq: Min 45 cr, postbac grad or sped minor, no grad credit

SPED 4435. Parent and Professional Communication and Collaboration. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Group process, problem solving, decision-making, collaboration, and teamwork applied to the special education process. Techniques for working with parents, professionals, paraprofessionals, and community agencies when planning and implementing Individualized Education Plans. prereq: 4433, 45 cr, postbac or sped minor or instructor consent, no grad credit

SPED 4452. Academic Interventions for Students with Disabilities. (4 cr.; A-F or Audit; Every Fall & Spring)
Understanding various models for teaching students with reading, writing, or math difficulties; development of intervention plan based on assessment and observation. Practicum. prereq: SPED 4433, admission to IESE program and successful completion of Block One courses and associated field experience or SPED postbac or instructor consent

SPED 4455. Transitional Planning for Adolescents with Disabilities. (4 cr.; A-F or Audit; Periodic Fall & Summer)
Assessment procedures, planning and instructional methods to help students with disabilities make the transition from school to postsecondary training, education, and employment. Practicum. prereq: Successful completion of Block Four, which is Student Teaching in a general education setting or postback or instructor consent, no grad credit

SPED 4585. Individual Education Plans: Development and Implementation. (3 cr.; A-F or Audit; Periodic Fall)
Historical perspective of the Individual Education Plan (IEP); its professional significance in education and the impact of the IEP on students and teachers in special education. Explores procedural guidelines, develop an IEP based on best practice. prereq: Admission to IESE program and successful completion of Blocks One and Two courses and associated field experiences, no grad credit

SPED 4600. Student Teaching. (1-12 cr.; S-N or Audit; Every Fall, Spring & Summer)
Observational, evaluative, and instructional experience with students with disabilities in K-12 settings. pre-req: Successful completion of Block Four, which is Student Teaching in a general education setting, or postbac or instructor consent. No grad credit

SPED 4610. Professional Issues. (1 cr.; A-F only; Every Spring)
Reflections on current issues and ethical dilemmas in the field of early childhood special education, birth through age eight. prereq: No grad credit

SPED 5204. Assessment in the General and Special Education Classroom. (4 cr.; A-F or Audit; Every Fall & Spring)
Exploration of topics in responsive and responsible assessment of student learning. Candidates will be introduced to use of assessment strategies and making decisions about exceptionality, eligibility, and educational programming. Topics include types of assessment strategies, large-scale and high stakes testing, rubrics, checklists and other evaluative tools and techniques. This course has a 30-hour practicum. prereq: sped post-bac grad credit

SPED 5250. Foundations of Autism Spectrum Disorders. (3 cr.; max 4 cr.; A-F or Audit; Periodic Fall)
Includes history, definitions, assessment, characteristics, legal aspects, varying perspectives, and etiology of the Autism Spectrum Disorders.

SPED 5260. Language and Social Skills for Children and Youth with Autism Spectrum Disorders. (4 cr.; A-F or Audit; Periodic Spring & Summer)
Specialized instruction in the foundation of language development, social stories, augmented and alternative communication systems, theory of mind, social skill development and play. prereq: 4250 or 5250 and 4270 or 5270

SPED 5270. Methods for Teaching Children and Youth with Autism Spectrum Disorders. (4 cr.; A-F or Audit; Periodic Spring & Summer)
In-depth assessment, environmental factors, curricular options, instructional strategies, behavioral programming, material for teaching, sensory integration strategies, IEP/IIIP development and implementation, and technology on the continuum of placements for children and youth with ASD. prereq: 4250 or 5250 or instructor consent

SPED 5280. Assessment of Students with Autism Spectrum Disorders. (2 cr.; A-F or Audit; Fall Even Year)
This course will focus on assessment procedures used by practitioners in the field of special education - specifically in Autism. Students will learn a variety of standardized and informal assessment procedures, referral, evaluation, planning, and programming. Students will also learn to interpret and integrate evaluation results in the planning and programming process in working with students with Autism. prereq: 4250 or 4260 and 4270; no grad credit

SPED 5361. Characteristics of Developmental Disabilities. (4 cr.; A-F or Audit; Periodic Summer)
Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Overview of children with moderate to severe developmental disabilities. Special emphasis will be placed on characteristics, etiology, implications of medical conditions, and the legal aspects of educating students with developmental disabilities. Assessment, instructional, and collaborative strategies will be introduced. prereq: Departmental consent

**SPED 5381. Classroom and Behavior Management.** (4 cr.; A-F or Audit; Every Fall & Spring) Classroom management and behavior change for P-12 students; identification and assessment of problem behaviors; proactive and reactive strategies for managing disruptive behavior; application of applied behavior analysis to modifying behaviors; legal and ethical issues in behavior change. Concurrent with 4381; requires an additional paper, research project or field based practicum (option for post baccalaureate students at the 5000 level). prereq: 4433, postbac grad or instructor consent

**SPED 5433. Foundations in Special Education.** (4 cr.; Student Option; Every Fall, Spring & Summer) History, philosophy, theories, and issues of special education. Overview of special education rules and processes. Survey of exceptionalities, including disability perspectives. Because this course is taught concurrently with 4433, it will require one or more of the following: paper, project, or field based practicum. prereq: Postbac grad student or instructor consent

**SPED 5435. Parent and Professional Communication and Collaboration.** (4 cr.; Student Option; Periodic Fall) Group process, problem solving, decision making, collaboration, and teamwork applied to the special education process. Techniques for working with parents, professionals, paraprofessionals, and community agencies when planning and implementing Individualized Education Plans. Because this course is taught concurrently with 4433, it will require one or more of the following: paper or project. prereq: 4433 or 5433, postbac grad or instructor consent

**SPED 5425. Academic Interventions for Students with Disabilities.** (4 cr.; A-F or Audit; Every Spring) Understanding various models for teaching students with reading, writing, or math difficulties; development of intervention plan based on assessment and observation. Practicum. prereq: 4433 or 5433, postbac grad or instructor consent

**SPED 5455. Transitional Planning for Adolescents With Disabilities.** (4 cr.; A-F or Audit; Periodic Spring & Summer) Assessment procedures, planning and instructional methods to help students with disabilities make the transition from school to postsecondary training, education, and employment. Practicum. prereq: 5433 or 4433, postbac grad or instructor consent

**SPED 5585. Individual Education Plans: Development and Implementation.** (3 cr.; A-F or Audit; Every Fall & Summer) Historical perspective of the Individual Education Plan (IEP). Its professional significance in education and the impact of the IEP on students and teachers in special education. Explores procedural guidelines, develops an IEP based on best practice and develop lesson and unit plans.

**SPED 5600. Student Teaching.** (1-12 cr.; S-N or Audit; Every Fall, Spring & Summer) Observational, evaluative, and instructional experience with students with disabilities in K-12 settings. Seminar included. prereq: instructor consent

**SPED 5870. Professional Methods for Working with Fetal Alcohol Spectrum.** (4 cr.; A-F or Audit; Every Fall) Exploration of the continuum of placements of living, education, and vocational settings for individuals with FASD. Advocacy issues, in-depth assessment, environmental factors, curricular options, IEP/IEP development and implementation and programming of the lifespan of individuals with FASD. prereq: 5850 or instructor consent; credit will not be granted if already received for 4870

**SPED 5991. Independent Study.** (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer) Directed independent study, readings or projects of interest to student. prereq: Department approval

### Statistics (STAT)

**STAT 1411. Introduction to Statistics.** (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall & Spring) Statistical ideas involved in gathering, describing, and analyzing observational and experimental data. Experimental design, descriptive statistics, correlation and regression, probabilistic models, sampling, and statistical inference. prereq: Math ACT 21 or higher or a grade of at least C- in SSP 0103 or department approval

**STAT 2411. Statistical Methods.** (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall & Spring) Graphical and numerical descriptions of data, elementary probability, sampling distributions, estimations, confidence intervals, one-sample and two-sample t-test. prereq: Math ACT 24 or higher or a grade of at least C- in Math 1005 or higher or department approval

**STAT 3411. Engineering Statistics.** (3 cr.; A-F or Audit; Every Fall & Spring) Statistical considerations in data collection and experimentation. Descriptive statistics, least squares, elementary probability distributions, confidence intervals, significance tests, and analysis of variance as applied analysis of engineering data. prereq: MATH 1297 with a grade of C- or better, cannot be applied to math major or minor; no grad credit

**STAT 3611. Introduction to Probability and Statistics.** (4 cr.; A-F or Audit; Every Fall, Spring & Summer) Basic probability, including combinatorial methods, random variables, mathematical expectation. Binomial, normal, and other standard distributions. Moment-generating functions. Basic statistics, including descriptive statistics and sampling distributions. Estimation and statistical hypothesis testing. prereq: A grade of at least C- in Math 1290 or Math 1296

**STAT 3612. Introduction to Probability and Statistics II.** (3 cr.; A-F or Audit; Every Fall & Spring) An introduction to statistics. Sample distributions, point and interval estimation, hypothesis testing, linear regression, one- and two-way analysis of variance, goodness-of-fit and non-parametric statistics. prereq: 3611 and Math 1297 or equivalent or instructor consent

**STAT 4040. Introduction to Survey Sampling.** (3 cr.; A-F or Audit; Every Spring) Simple random sampling, systematic sampling, cluster sampling, stratified sampling, probability proportional to size sampling, ratio and regression estimation, sampling frames, sample size determination, sources of bias, cost models, and nonresponse. Data analysis using computer software. prereq: A grade of at least C- in MATH 1290 or 1296 or 1596 and STAT 2411 or 3411 or 3611 or instructor consent

**STAT 4050. Introduction to Statistical Computing.** (3 cr.; A-F or Audit; Every Fall) Statistical, graphical and numerical data analysis using modern statistical software. Database management and statistical modeling including regression and categorical data analysis. Topics in data generation and simulation, prereq: A grade of at least C- in STAT 3411 or 3611 or instructor consent

**STAT 4060. Introduction to Biostatistics.** (3 cr.; A-F or Audit; Every Spring) Introduction to statistical methods applicable to biological and biomedical data. Analysis of bioassay, case-control, and disease/expose data. Introduction to statistics in clinical trials. Use of regression and logistic regression in analyzing biological/biomedical data. Categorical data analysis with application to the life sciences. Basic survival analysis. prereq: Math 1290 or 1296 or 1596 and STAT 2411 or 3411 or 3611 with grade of C- or better or consent of instructor.

**STAT 4101. Actuarial Probability.** (1 cr.; S-N or Audit; Every Fall) Problem-solving techniques in probability used in the mathematical foundations of actuarial science. prereq: 3611. Math 3298 a grade of C- or better is required in all prerequisite courses; credit cannot be applied to math major or minor; no grad credit

**STAT 5411. Analysis of Variance.** (3 cr.; Student Option; Every Fall) Analysis of variance techniques as applied to scientific experiments and studies. Randomized block designs, factorial designs, nesting. Checking model assumptions. Using statistical computer software. prereq: 3411 or 3611; a grade of C- or better is required in all prerequisite courses

**STAT 5511. Regression Analysis.** (3 cr.; A-F or Audit; Every Fall & Spring) Simple, polynomial, and multiple regression. Matrix formulation of estimation, testing, and
Applications of probabilistic and statistical modeling methods, such as linear and nonlinear regression, generalized linear models, Markov chains, and Poisson processes. Case study analyses of models from areas such as natural sciences, medicine, engineering, and industry. prereq: 5572 with a grade of C- or better

STAT 8774. Plan B Final Project Research. (1-4 cr.; A-F only; Every Fall & Spring) Independent research performed under Advisors supervision. pre-req: Mathematical Sciences M.S. student, advisors consent

STAT 8888. Thesis Credits: Doctoral. (1 cr. max 100 cr.) No Grade Associated; Every Fall, Spring & Summer (No description) prereq: max 18 cr per semester or summer; 24 cr required

This course teaches students to read and respond to texts at the college level. In a supportive and active classroom, students will develop critical thinking and rhetorical skills they can immediately apply to any activity that requires college-level reading and/or writing. Students will use these active reading strategies to deepen their understanding of a wide variety of texts. Student will also respond to these texts in multiple ways.

SSP 1054. Learning Strategies. (2 cr.; A-F only; Every Fall & Spring) Focuses on the skills necessary to study more efficiently for college. Topics include: time management, test taking strategies, note taking, concentration, and library orientation.

SSP 1095. Special Topics in College Learning (Various Titles to be Assigned). (1-2 cr.; max 6 cr.); A-F or Audit; Periodic Fall & Spring Various topics on learning strategies.

SSP 1101. Personal Development. (2 cr.; A-F or Audit; Every Fall & Spring) Introduction to some of the components of the human personality and the relationship of the individual to the environment. Focuses on such topics as human relations, values, interpersonal skills and competencies, decision making, and conflict resolution.

SSP 2001. UMD Campus Tour Guide Training. (1 cr.; A-F or Audit; Every Fall & Spring) SSP led training for new Admissions tour guides. Students learn how to be effective communicators with a wide variety of audiences, how to address sensitive topics and how to build relationships across the university in the tour guiding role. Students are informed about campus facilities, programs activities, services and policies and how to communicate these concepts to prospective students and visitors. pre-req: instructor consent

SSP 2002. UMD Campus Tour Guide Practicum. (1 cr.; max 4 cr.); S-N or Audit; Every Fall & Spring) SSP led training for new Admissions tour guides. Students reflect upon prior experiences to continue development as a UMD tour guide. Responsibilities will be described in a graded contract provided by course instructor. pre-req: SSP 2001 or SSP 3001 and instructor consent

SSP 3001. Preparation for SSP Teaching Assistantship. (1-3 cr. max 9 cr.); Student Option; Every Spring) Skills needed to develop and conduct effective small group learning experiences. Communication processes, leadership styles and responsibilities, goal setting, social influences, developmental stages of groups, learning theories, and content as related to appropriate SSP skills course. pre-req: instructor consent

SSP 3002. SSP Teaching Assistantship Practicum. (1-3 cr. max 18 cr.); A-F or Audit; Every Fall & Spring) Leading structured small groups in designated SSP courses. TA responsibilities outlined
in contract with faculty supervisor. prereq: instructor consent

**SSP 3003. Tutor Training: Individualization of Instruction.** (2 cr.; A-F only; Every Fall & Spring) Introduction to contemporary learning theory and its application to one-on-one and small group learning situations (tutorials). Emphasis on philosophy, procedures, and practices known to be effective in improving learning. prereq: instructor consent

**SSP 3004. Tutor Practicum.** (1-2 cr. [max 6 cr.]; Student Option; Every Fall & Spring) Supervised practicum for students leading one-on-one and small group tutorials. Tutor responsibilities outlined in contract with instructor. prereq: 3003 or instructor consent

**SSP 3005. UMD Seminar Teaching Assistant Training.** (1 cr.; A-F or Audit; Every Spring) Training course designed to provide both a theoretical understanding of student development in higher education and a practical collection of skills in working with faculty to foster this development. pre-req: minimum 2.5 GPA, instructor consent

**SSP 3006. Teaching Assistant Practicum for UMD Seminar.** (1-3 cr.; Student Option; Every Fall & Spring) As the practicum component to the Teaching Assistant experience, this course provides both opportunity and context for T.A.s to implement elements of their training in order to work with first year university students. pre-req: SSP 3005 with minimum grade of B

**SSP 3010. Supplemental Instruction Leadership Training.** (2 cr.; A-F or Audit; Every Fall & Spring) Provides training to lead supplemental instruction (SI) sessions for SI support courses. Students develop leadership skills to lead group study sessions using the Supplemental Instruction model and learn best practices for fostering students learning. pre-req: instructor consent

**SSP 3012. Transfer Connect Mentor Leadership Training.** (2 cr.; A-F or Audit; Every Spring) Provides training to mentor peers in specific contexts. Students develop leadership skills and learn to examine and document their understanding of individual learning and mentoring processes and outcomes. pre-req: minimum cumulative GPA of 3.0, full time UMD student, instructor consent

**SSP 3013. Transfer Connect Mentor Leadership Practicum.** (1 cr. [max 3 cr.]; S-N or Audit; Every Fall & Spring) Supervised practicum for student mentors wishing to continue to work with UMD's Transfer Connect Peer Mentor Program. Mentors' responsibilities are outlined in a contract with their instructors. pre-req: SSP 3012 and instructor consent

**SSP 3014. Financial Peer Mentor Leadership Training.** (2 cr.; A-F or Audit; Every Spring) Provides training to mentor peers in financial literacy. Students develop leadership skills and learn to examine and document their understanding of individual learning, mentoring and personal finance processes and outcomes. pre-req: full time UMD student, instructor consent

**SSP 3015. Financial Peer Mentor Leadership Practicum.** (1 cr. [max 3 cr.]; S-N or Audit; Every Fall & Spring) Supervised practicum for student mentors wishing to continue to work with UMD's Financial Peer Mentor Program (FPMP). Mentors' responsibilities outlined in a contract with their instructor. pre-req: SSP 3014 and instructor consent

**Theatre (TH)**

**TH 901. B.F.A. Track Selection.** (0 cr.; S-N only; Every Fall) Presentation of performance audition or technical portfolio for admission to full B.F.A. candidacy. prereq: Department approval

**TH 1001. Introduction to Theatre Arts.** (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Appreciation of theatre arts. Developing sensitivity and critical sophistication as articulate, discriminating theatregoers. Play viewing, play reading, critiques, and term projects.

**TH 1021. Celebrities in Society.** (3 cr.; A-F or Audit; Every Fall) A historical survey of celebrity icons in the performing arts, the engineered media used to market stardom, and the examination of the social, economic, and political power celebrity icons have on our culture.

**TH 1031. Introduction to Theatrical Design.** (3 cr.; A-F or Audit; Every Fall & Spring) Course will introduce students to the fundamental elements and principles of design and how they apply to the theatre experience of scenery, costumes, lighting and sound.

**TH 1051. Introduction to Film.** (FINE ARTS; 3 cr.; A-F or Audit; Every Fall) History and genres of film; how movies are made. Watching and analyzing films and developing an articulate and discerning viewpoint.

**TH 1053. Film and Society.** (3 cr.; A-F or Audit; Every Spring) An examination of how films influence the moral and cultural life of our time, and how culture affects film.

**TH 1071. Musical Theatre History.** (HUMANITIES; 3 cr.; A-F or Audit; Every Spring) Musical theatre genre focusing on integration of theatre, music, and dance. Major librettists, composers, directors, choreographers, and performers.

**TH 1111. Introduction to Acting.** (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Developing the ability to respond to imaginative situations with sincerity, individuality, and effectiveness; projects in elementary acting techniques.

**TH 1112. Acting I.** (3 cr.; A-F or Audit; Every Spring) Introduction to fundamental skills of acting: objectives, actions, given circumstances, activities. Focus on freeing natural impulses through imagination and improvisation. For BFA theatre majors. prereq: 1001 or 1801 or BFA Th major or instructor consent

**TH 1114. Music Theory and Sight Singing for the Musical Theatre Performer.** (3 cr.; A-F or Audit; Every Fall) This course presents the technical musical tools needed by the Musical Theatre performer to prepare the musical elements of his/her audition and/or role. It is designed to teach the performer how to read music and music terminology, musical theatre song form analysis, how to play a melody line on the piano, how to respond and communicate with a musical director and/or conductor, and how to transpose a song into another key other than its original. The courses ultimate goal is to produce a musically literate actor, and one who can self-sufficiently learn and prepare any song or harmony part, be it for an audition or a performance. prereq: instructor consent; credit will not be granted if already received for Mu 1010 or 1011 or Mu 1111 or Mu 1112

**TH 1115. Musical Theatre Singing I: Introductory Group Instruction.** (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) First-year course that serves as an introduction to singing technique and interpretation for students with an emphasis in musical theatre. It will address the basic technical elements including breathing, support, practice habits, resonance, registration, placement, and performance practices. In addition, we will study a variety of beginning repertoire from the legit eras of musical theatre. This course consists of a 50-minute group voice lab and a 15-minute private diagnostic per student, per week. pre-req: First year BFA Musical Theatre Enphasis and instructor consent.

**TH 1116. Audition Techniques I.** (2 cr. [max 3 cr.]; A-F or Audit; Every Spring) Theory, technique, and application of audition skills for the actor. prereq: instructor consent

**TH 1118. Voice and Movement for the Actor.** (3 cr.; A-F or Audit; Every Fall) Introduction to voice and movement techniques designed to liberate, develop, and strengthen actor's body and voice. prereq: instructor consent

**TH 1199. Performance Practicum I.** (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) Rehearsal and performance of minor role, as determined by instructor, in a play or dance performance before a public audience in UMD Theatre productions. prereq: instructor consent; by audition only

**TH 1299. Theatre Marketing/Management Practicum.** (2 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working in theatre box office, management, marketing, and advertising promotion for UMD theatre productions. (90 hrs work) prereq: Th major or minor
TH 1301. Stagecraft. (5 cr.; A-F or Audit; Every Fall & Spring) Introduction to methods of planning, constructing, painting, rigging, and shifting stage scenery. Lab work required constructing and painting scenery and properties for theatrical productions.

TH 1312. Musical Theatre Voice Lessons. (1 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring) 30-minute private lesson designed as a survey of the singing voice for the theatre addressing basic technical elements including breathing, support, practice habits, resonance, registration placement and performance practices. A variety of repertoire from all musical theatre eras will be reviewed, pre-req: Theatre BA or BFA major and instructor consent

TH 1351. Stage Rendering Techniques. (3 cr.; A-F or Audit; Every Fall) Practical course in study of different rendering mediums, styles, and techniques for the theatrical designer. pre-req: 1001 or 1801 or instructor consent

TH 1399. Scenery and Properties Practicum. (; 2 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working in technical theatre media and materials used in building costumes for theatrical productions. Lab work required.

TH 1401. Costume Construction I. (5 cr.; A-F or Audit; Every Fall & Spring) Introduction to study and practice of methods and materials used in building costumes for theatrical productions. Lab work required.

TH 1451. Stage Makeup. (3 cr.; A-F or Audit; Every Fall) Introduction to principles and materials of stage makeup and their application in developing a character makeup for theatrical productions. pre-req: 1001 or 1801 or instructor consent

TH 1499. Costume Practicum. (; 2 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working on costume construction and costume crafts for theatrical productions. (90 hrs work) pre-req: Th major or minor

TH 1551. Sound Design. (3 cr.; A-F or Audit; Spring Even Year) Principles and practice of choosing, editing, and running sound cues for theatrical productions. pre-req: 1001 or 1801 or instructor consent

TH 1599. Lighting/Sound Practicum. (; 1 cr. [max 3 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working on lighting and sound for theatrical productions. (45 hrs work) pre-req: Th major or minor

TH 1601. Stage Management. (; 3 cr.; A-F or Audit; Spring Odd Year) Theory and practice of stage management techniques applicable to a variety of theatre forms and situations.

TH 1699. Running Crew Practicum. (2 cr. [max 16 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working backstage during the run of theatrical productions. (90 hrs work) pre-req: instructor consent

TH 1801. Elements of Theatre. (; 3 cr.; A-F or Audit; Every Fall) Intensive study in rudimentary theatre vocabulary, research methods, principles of play production, preproduction script analyses, performance criticism, and postproduction assessment. Play viewing, play reading, critiques, and term projects. pre-req: th major

TH 2112. Acting II: American Realism. (3 cr.; A-F or Audit; Every Fall) Continuation of 1112 with a concentration on American realism, characterization, and living truthfully in the moment. pre-req: instructor consent

TH 2113. Acting III: Shakespeare. (3 cr.; A-F or Audit; Every Spring) Acting Shakespearean text, with an emphasis on scansion, verse, and imaging. Continued focus on objectives, actions, given circumstances, and imagination. pre-req: 2112 or instructor consent

TH 2114. Acting: Musical Theatre. (3 cr.; A-F or Audit; Every Spring) Application of theories and techniques of musical theatre performance. pre-req: instructor consent

TH 2115. Musical Theatre Singing II: The Modes. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Private singing lessons (45-minutes each week) designed specifically for the 2nd year BFA Acting and Musical Theatre students. Emphasizing the song modes utilized for the Broadway musical theatre stage. pre-req: 901 and instructor consent

TH 2115. Musical Theatre Singing II: The Modes. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Private singing lessons (45-minutes each week) designed specifically for the 2nd year BFA Acting and Musical Theatre students. Emphasizing the song modes utilized for the Broadway musical theatre stage. pre-req: 901 and instructor consent

TH 2116. Speech for the Actor. (3 cr.; A-F or Audit; Every Fall) Private study (45-minutes each week) of the actor's speech and voice. pre-req: 1001 or 1801

TH 2117. Musical Theatre Singing I: Broadway Idioms. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) Private singing lessons (45-minutes each week) designed specifically for the 1st year BFA Acting and Musical Theatre students. Emphasizing the speech and musical idioms utilized for the Broadway musical theatre stage. pre-req: 901 and instructor consent

TH 2118. Stage Dialects. (3 cr.; A-F or Audit; Spring Even Year) Ear training and articulation (in anticipation of dialects); acquisition of nonregional dialect for the stage through use of phonetics and classical texts. pre-req: instructor consent

TH 2119. Stage Dialects. (3 cr.; A-F or Audit; Spring Even Year) Ear training and articulation (in anticipation of dialects); acquisition of nonregional dialect for the stage through use of phonetics and classical texts. pre-req: instructor consent

TH 2399. Production Practicum II. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Practical experience working in technical areas of theatrical production, providing management and leadership in all areas of theatre production. pre-req: 1301 or 1401, instructor consent

TH 2400. Survey of the History of Costume. (3 cr.; A-F or Audit; Spring Odd Year) Course will explore the history of costume from ancient civilization through the 19th century.

TH 2451. Hair and Wig Styling Techniques for the Theatre. (3 cr. [max 6 cr.]; A-F or Audit; Spring Odd Year) This course is designed to explore techniques for styling actors’ hair and wigs for specific hairstyles required in theatrical production.

TH 2801. Play Analysis: Dramatic Theory and Theatre Research. (; 3 cr.; A-F or Audit; Every Fall) Exploring how to analyze a play from the perspective of those preparing for the production process. Beginning with play structure and theory, the course will examine plays form various periods and styles, using different perspectives to frame the analysis. Student will write analysis papers, learn to do research on various topics from several creative perspectives, and engage in classroom discussions. pre-req: 1001 or 1801

TH 2841. The Theatre Experience. (3 cr.; A-F or Audit; Spring Odd Year) Course provides students with opportunities to explore various approaches to theatre-making by studying the methods and missions of influential contemporary theatre companies, and seeing their work in productions. Emphasis will be placed on how such collectives define their work, communicate with audiences, and further theatre practices in the US and around the world by focusing on theatre as a commercial enterprise, artistic expression, and/ or mode of cultural communication.

TH 2851. Film History. (3 cr.; A-F only; Every Spring) Survey of American and international cinema from 1870s to present day, with special focus on filmmakers, genres, and styles. pre-req: soph or instructor consent

TH 3111. Introduction to Scene Study. (3 cr.; A-F or Audit; Fall) Course is designed to introduce students to the major elements of the role of the scenic designer and scenic artist. pre-req: instructor consent

TH 3111. Introduction to Scene Study. (3 cr.; A-F or Audit; Fall) Course is designed to introduce students to the major elements of the role of the scenic designer and scenic artist. pre-req: instructor consent

TH 3112. Acting IV: Improvisation. (3 cr.; A-F or Audit; Every Fall) Freeing the actor's natural impulses through in-depth, hands-on exploration of improvisational theatre. Emphasis placed on actor's learning to create without fear. pre-req: instructor consent

TH 3114. Musical Theatre Repertoire. (1 cr.; A-F or Audit; Every Fall) This course enables third year BFA Musical Theatre students to discover, research, and perform musical theatre repertoire. In addition, students will explore the concepts of type and brand within the business of professional musical theatre. This course will also address style within performance practice, including historical context, value systems, relationship, fashions, and vocal stylings. pre-req: Third year Musical Theatre Students and instructor consent

TH 3115. Musical Theatre Singing II. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Private study (45 minutes each week) of the singing voice for the musical theatre actor.

Courses listed in this catalog are current as of 2018-10-01. For up-to-date information, visit www.catalogs.umn.edu.
Designed to be taken in the 3rd year of study for the BFA Musical Theatre student, the focus will be on the exploration and execution of vocal styles found in musical theatre for the singing actor. pre-req: 2115 and instructor consent

**TH 3118. Voice Release.** (1 cr.; S-N or Audit; Every Spring)
The course will focus on the actor's ability to free the vocal instrument during the phonation demands of training, warm-ups, and performance, and will be dedicated to the further development of the vocal instrument's freedom, power, range, and flexibility through the study of resonance, projection, and the ability to 'sense' physical sound. prereq: 1118 or instructor consent

**TH 3151. Stage Combat/Circus.** (3 cr.; A-F or Audit; Every Fall)
Intensive study of techniques and principles of stage combat focusing on armed (rapier/dagger/broadsword) and unarmed combat. Physical development through various circus skills: juggling, tumbling, and balancing. prereq: 0901 or instructor consent

**TH 3171. Acting V: Character/Masks.** (3 cr.; A-F or Audit; Every Spring)
Using the body to express and develop character through mask work, improvisation, and selected scene work. prereq: 60 cr, BFA Th major, instructor consent

**TH 3199. Performance Practicum II.** (2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Rehearsal and performance of major role, as determined by instructor, in a play or dance before a public audience of UMD Theatre productions. prereq: instructor consent; by audition only

**TH 3201. Stage Direction.** (3 cr.; A-F or Audit; Every Fall)
Comprehensive, portfolio approach focusing on interpretive role of director in contemporary theatre. Major tasks facing director as collaborator; lecture, written assignments, workshops, and projects. prereq: 1111 or 1112, 60 cr, Th major or minor or instructor consent

**TH 3218. Acting V: Physical Theatre.** (2 cr.; A-F or Audit; Every Spring)
Physical Theatre will explore theatrical character, collaboration, and storytelling with a focus on corporeal expression. pre-req: minimum 60 credits, BA or BFA Theatre major, instructor consent

**TH 3301. Stagecraft II.** (3 cr. [max 9 cr.]; A-F or Audit; Every Spring)
This course will explore construction techniques such as metal working and finish carpentry. These skills are needed for anyone interested in pursuing a job in the field of scenery and/or properties construction. prereq: 1301

**TH 3331. Scenic Design I.** (3 cr.; A-F or Audit; Every Spring)
Elements of design used in creation of scenery for theatre. prereq: 1301 or instructor consent

**TH 3341. Properties Construction.** (3 cr. [max 6 cr.]; A-F or Audit; Every Spring)
Course looks at the specialized techniques and methods used in the construction of stage properties. Major focus will be placed on the areas of metalworking, casting, carving, furniture construction, and upholstery. Explore research techniques in period, style, and chronology. prereq: 1301

**TH 3351. Theatrical Drafting.** (3 cr.; A-F or Audit; Spring Even Year)
Principles and practice in techniques of drafting traditional and nontraditional types of stage scenery. prereq: 1301

**TH 3352. Stage Rendering Techniques II.** (3 cr.; A-F or Audit; Every Fall)
Practical course in study of different rendering mediums, styles, and techniques for the theatrical designer. Continuation of TH 1351. prereq: 1351

**TH 3355. Computer-Aided Theatrical Design.** (3 cr.; A-F or Audit; Spring Odd Year)
Computer-aided drafting and design with technical applications to scenic design, lighting design, and technical direction. prereq: 1301 or instructor consent

**TH 3371. Scene Painting.** (3 cr.; A-F or Audit; Fall Even Year)
Advanced work in use of both traditional and modern methods of painting stage scenery emphasizing practical lab work. (2 hrs lect, 2 hrs lab) prereq: 1301

**TH 3375. Mechanical Design for Stage.** (3 cr.; A-F or Audit; Spring Even Year)
The course looks at how mechanical design principles are applied to common stage effects. Topics covered will include theatrical rigging, understanding forces and loads, material selection, fluid power mechanics, winches and motors. prereq: 1301 or instructor consent

**TH 3399. Production Practicum III.** (3 cr.; A-F or Audit; Spring Even Year)
Practical experience working in technical areas of theatrical production, providing management and leadership in all areas of theatre production. prereq: TH 1699 and instructor consent

**TH 3401. Costume Construction II.** (3 cr.; A-F or Audit; Spring Odd Year)
Advanced principles and practices of costume construction techniques emphasizing pattern drafting and draping and a study of advanced craft techniques. prereq: 1401 or instructor consent

**TH 3441. Costume Design I.** (3 cr.; A-F or Audit; Every Spring)
Principles and practice of costume design with emphasis on designing and rendering costumes from various historical periods. prereq: 1401, 1001 or 1801 or instructor consent

**TH 3501. Advanced Digital Technology for Theatre.** (3 cr.; A-F or Audit; Spring Odd Year)
Advanced techniques of computer technology for theatre production including operation and functionality of digitally controlled equipment for lighting, sound and stage equipment. prereq: 1301 or instructor consent

**TH 3699. Production Management.** (2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Participation in management and leadership in all areas of theatre production. (90 hrs work) prereq: instructor consent

**TH 3851. Screenwriting.** (3 cr.; A-F or Audit; Every Fall)
Introduction to and practice in fundamentals of screenwriting. Dialogue, character, structure, story development, writing for a visual medium, formatting. prereq: instructor consent

**TH 3871. Playwriting.** (FINE ARTS; 3 cr.; A-F or Audit; Spring Even Year)
Instruction and practice in fundamentals of playwriting, including dialogue, character, and scenario development; traditional and experimental formal structures; emphasizes theatre format with peripheral screenplay information.

**TH 3881. New Play Development Workshop.** (3 cr. [max 6 cr.]; A-F or Audit; Spring Odd Year)
Intensive work in development of new scripts from initial reading to minimally staged performance. prereq: 1001 or 1801 or instructor consent

**TH 3991. Independent Study in Theatre.** (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)
Directed readings and projects arranged between student and faculty mentor. prereq; instructor consent; undergrads max 6 cr in 3991 and 5991 combined

**TH 3995. Special Topics: (Various Titles to be Assigned).** (1-3 cr. [max 9 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
Intensive study of special topics falling outside usual theatre or dance courses. Topic announced before course offered. prereq: Instructor consent

**TH 4112. Acting VI: Scene Study.** (3 cr. [max 6 cr.]; A-F or Audit; Periodic Fall & Spring)
Concentrated exploration of realistic acting through use of scene study and other text work, with special focus on scenes and characters dealing with heightened emotions and situations. prereq: instructor consent, no grad credit

**TH 4113. Acting VII: Period Styles.** (2 cr.; A-F or Audit; Every Fall)
Study and practice of acting in plays from selected periods prior to the twentieth century. Topics may include Greek, Roman, Restoration, and Georgian periods. prereq: 901, 1116, minimum 90 credits or instructor consent; no grad credit

**TH 4115. Musical Theatre Singing IV: Transition Into the Profession.** (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring)
Private study (45 minutes each week) of the singing voice for the musical theatre actor. Designed as a capstone course to be taken in the 4th year of study for the BFA Musical Theatre student, the focus will be on the transition from formal training to professional application in the business of musical theatre for the singing actor. pre-req: 2115 and instructor consent
TH 4116. Audition Techniques II. (1 cr.; A-F or Audit; Every Fall)
Preparation for the actor entering the work force. The student will establish a repertoire of prepared audition monologues as well as develop advanced skills in cold readings. The student will also develop self-marketing skills. prereq: 901, 1116, minimum 90 credits or instructor consent; no grad credit

TH 4171. Acting VIII: Acting for the Camera. (3 cr.; A-F or Audit; Every Spring)
Contemporary adjusting mechanisms necessary for film, television, and commercials. prereq: 4151 or instructor consent; no grad credit

TH 4300. Theatre History in England. (GLOBAL PER; 4 cr.; A-F or Audit; Periodic Summer)
This short-term study abroad course will explore Shakespeare's theatre world in London and his birthplace in Stratford-upon-Avon, allowing students to experience, first-hand, how Shakespeare’s plays were shaped by his environment in his own day, and how they were modified, adapted, and marketed over the next four centuries. By attending performances at modern reconstructions of the Globe and Blackfriars, students will see how Shakespeare wrote his plays to capitalize on the strengths (and minimize the limitations) of the physical theatre. Students will also tour the areas where Shakespeare lived and worked, such as Southwark and Blackfriars, and visit historic landmarks, such as The Tower, Westminster Abbey, and the Inns of Court, that figure prominently in his plays. A side-trip to Stratford-upon-Avon will help students better understand his upbringing-they will visit his birthplace and grammar school and also see where he returned to retire early, live extravagantly, and die. Stratford-upon-Avon is also the home of the Royal Shakespeare Company, the world-famous acting troupe devoted to promoting Shakespeare’s works. A principal focus of this course is to consider why Shakespeare is more popular today that he has ever been. Seeing Shakespeare performed by a range of actors (A-list to amateur), in a variety of theatres (West End to fringe), in a range of dramatic styles (period performance to avant-garde) will bring to life how Shakespeare is transformed from the page to the stage, how his works have been suited to changing tastes across the centuries, and why, despite the challenges posed by the language and subject matter of his plays, he continues to have a commanding presence in theatres and classrooms across the world. pre-req; instructor consent; also visit the UMD Study Abroad office

TH 4331. Scenic Design II. (3 cr.; A-F or Audit; Fall Odd Year)
Advanced study in creating scenic designs for a variety of theatrical forms, including musical comedy, opera, dance, and legitimate theatre. prereq: 3331

TH 4351. Portfolio Preparation and Presentation. (3 cr.; A-F or Audit; Every Fall)
Capstone course utilizes presentation of student's work in technical theatre/design to assess design/technical skills. Analysis of portfolio, job applications, resume development, and portfolio development techniques. prereq: instructor consent; no grad credit

TH 4371. Scene Painting II. (3 cr.; A-F or Audit; Fall Even Year)
This course will explore advanced techniques in theatrical painting, dimensional texture and surface treatment. prereq: 3371; no grad credit

TH 4399. Theatre: Special Projects. (2 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring)
Projects in directing, choreography of individual or groups, or designing of costumes, lighting, scenery, or sound. prereq: instructor consent

TH 4441. Costume Design II. (3 cr.; A-F or Audit; Spring Even Year)
Advanced principles and practice of costume design with emphasis on designing and rendering costumes from various historical periods. prereq: 3441 or instructor consent

TH 4501. Advanced Stage Lighting. (3 cr.; A-F or Audit; Spring Even Year)
Advanced theories and techniques used in designing lights for traditional and nontraditional theatre works. prereq: 1301 or instructor consent; no grad credit

TH 4801. History of the Theatre I. (HUMANITIES; 3 cr.; A-F or Audit; Every Fall)
Survey of style, theory, performance, and production techniques of world theatre from theoretical origins through early 19th century. prereq: instructor consent

TH 4802. History of the Theatre II. (3 cr.; A-F or Audit; Every Spring)
Survey of style, theory, performance, and production techniques of world theatre from 19th century to present. prereq: 4801 or instructor consent

TH 4841. Creative Collaboration. (3 cr.; A-F or Audit; Spring Even Year)
An advanced course in which students work collaboratively to develop original performance pieces from concept to production. The practice-based class will focus on alternative approaches to storytelling, using the theories and methodologies of physical and devised theatre, as well as theatre as social activism. Students work independently to create fully-staged productions. prereq: 2841 or instructor consent; no grad credit; credit will not be granted if already received for TH 2831

TH 4901. Intern Teaching in Theatre. (3 cr. [max 9 cr.]; A-F or Audit; Every Fall & Spring)
Practical experience teaching beginning courses in department. Students serve as intern teachers, assisting instructor in administration of course. prereq: instructor consent, no grad credit

TH 5991. Independent Study in Theatre. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Introduction to study and practice of methods and materials used in building costumes for theatrical productions. Lab work required. prereq: 1001 or 1801 or instructor consent

TH 5997. Internship in Professional Theatre. (1-12 cr.; S-N or Audit; Every Fall, Spring & Summer)
Internship with a cooperating professional, commercial, or repertory theatre. prereq: department approval; 1 cr for each 45 hrs work

Tribal Admin and Governance (TAG)

TAG 2801. Introduction to Tribal Administration and Governance. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course will provide an overview of tribal administration and governance. It will introduce students to principles of tribal sovereignty, tribal self-determination, and self-governance. Students will learn the significance of tribal constitutions, tribal jurisdiction and tribal laws. Students will be introduced to the interaction of federal, state, and tribal governments and how these interactions impact the governance of Native Nations. Students will be introduced to a variety of tribal government systems, and some common practices and problems in the administration of a tribal government. pre-req: TAG major

TAG 2820. Foundations of Indigenous Leadership. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Foundations of Indigenous Leadership is an historical survey of indigenous leaders with special emphasis on the Great Lakes region. By examining the histories of indigenous leaders and communities we will explore what makes for effective indigenous leaders. The role of traditional ethics in leadership will be a central theme of the course. pre-req: TAG major

TAG 3206. Federal Indian Policy. (CDIVERSITY, SOC SCI; 3 cr.; A-F only; Periodic Fall & Spring)
Examination of the formulation, implementation, evolution, and comparison of Indian policy from pre-colonial to self-governance. Introduces students to the theoretical approaches structuring research of federal Indian policy, views, and attitudes of the policy-makers and reaction of indigenous nations. Discussion of the policies and the impact related to those policies. prereq: minimum 30 credits and TAG major

TAG 3230. American Indian Tribal Government and Law. (CDIVERSITY, SOC SCI; 3 cr.; A-F or Audit; Periodic Fall & Spring)
American Indian tribal governments and leadership, historically and today, have aimed at the promotion and protection of the nation, oversee domestic and foreign affairs, and provided for the basic needs and desires of their citizens. This course provides students a general background of the history, development, structure, and politics associated with indigenous governments, analyzing how these institutions have been modified to meet ever-changing internal needs and external pressures. prereq: minimum 30 credits and TAG major

TAG 3810. Fundamentals of Tribal Strategic Management. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course examines the theory and practice of strategic planning and management for
tribal governments, public agencies, nonprofit organizations, collaborations, and tribal communities. pre-req: TAG major

TAG 3820. Fundamentals of Tribal Project Management. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course covers the processes of project management based upon the Project Management Institute (PMI) standards and knowledge areas. By the completion of the course, students will be able to demonstrate knowledge of project management terms and techniques such as: selection methods; work breakdown structures; Gantt charts, network diagrams, critical path analysis; cost estimates; earned value management; and motivation theory and team building. pre-req: TAG major

TAG 3997. Internship in American Indian Studies. (; 4-8 cr. [max 12 cr.]; A-F only; Every Fall, Spring & Summer)
Supervised lab experience in American Indian agency or project or with significant Indian clientele. Advance, concurrent, and follow-up written and oral presentations. prereq: TAG major, 60 credits; instructor consent

TAG 4230. Introduction to Federal Indian Law. (DIVERSITY, SOCSI; 3 cr.; A-F only; Periodic Fall & Spring)
Federal Indian law has had a profound effect on our lives, liberties, and properties of indigenous peoples. At times, U.S. policy and Supreme Court ruling shave worked to protect aboriginal rights, while at other times they have had devastating consequences. This course examines the role of the U.S. Supreme Court as a policy-making institution in their dealings with Indigenous nations, requiring us to ask about the origins of federal judicial power and their application indigenous peoples. prereq: TAG major and minimum 60 credits; credit will not be granted if already received for AMIN 3333

TAG 4250. American Indian Diplomacy: Treaties, Compacts, and Agreements. (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Fall & Spring)
Indigenous Nations have long engaged in diplomatic arrangements with one another, foreign nations, colonial/state governments, and the United States. Such political engagements affirm the inherent sovereignty of First Nations, recognizing the distinctive rights and power unique to Native peoples and were used to forge friendships, end wars, cede lands and resources, create reservations, and reserve hunting and fishing rights. This course examines the history of First Nations treaty making, the legal and political status of Indian treaties and agreement, the ambiguities and problems in indigenous-state diplomacy and treaty litigation. prereq: TAG major and minimum 60 credits

TAG 4810. Business Processes in Tribal Administration. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course examines fundamental business "best practices" in accounting, economics, operations, organizational management, statistics, financial management, marketing, and human resources within the specific context of Tribal enterprises and government. prereq: TAG major

TAG 4840. Current Issues and Opportunities in Tribal Administration and Governance. (; 3 cr.; A-F or Audit; Periodic Fall & Spring)
This course will study central issues and opportunities for tribal governments and consider innovative administrative/governance approaches. New Supreme Court cases, Congressional Acts and administrative policies provide new issues for tribal governments to react to and possibly may require a change to their administrative approaches to policy matters. Examples include Supreme Court decisions which have reduced tribal jurisdiction or Acts of Congress, such as the Indian Health Care Improvement Act, which changes or enhances health care delivery. Students will learn the significance of how external decisions by the federal or state government might impact tribal decision making. Students will also learn how enhancement and improvements to tribal constitutions or laws may benefit tribal members, communities as well as the surrounding non-Indian communities. Students will learn how problems can become opportunities, and how jurisdictional challenges require agile, innovative approaches by Native Nations. prereq: TAG major

TRES 5100. Foundations of Indigenous Environmental Systems and Worldviews (Bioregionalism). (; 3 cr.; A-F or Audit; Every Fall)
This introductory course explores environmental resources, practices, and stewardship from tribal perspectives. A variety of instructional experiences including sharing circles, guest lectures and field study introduce students to related Indigenous knowledge, management systems and stewardship practices. The current needs of tribal communities are examined through studying the idea of Native scholars, traditional teachers and environmental activists. prereq: admission to MTRES program or instructor consent

TRES 5101. Tribal Natural Resource Program Management 1. (; 3 cr. [max 6 cr.]; A-F or Audit; Every Fall)
This course is the first in a series of two that will provide the student with the understanding of the biological, chemical, and physical processes necessary to support Native American ways of life in balance with pressures of economic development. The course emphasizes practices that will provide sustainable subsistence foods and medicines for tribal member harvest and to support cultural activities. An integrated natural resource management approach will be used to discuss the reasons why clean air, water, and land are required to support a health environment, which in turn supports a health human population. Specific topics in this course may include geological setting, surface water and groundwater interaction, physical environment of lakes and streams, aquatic food webs, biodiversity, fisheries management, wild rice management, assessment of water quality trends, carrying capacity, environmental regulations and standards. Concepts of mineral stewardship on tribal lands will also be explored. This includes principles of the occurrence, extraction, and processing. prereq: Admission to MTRES program or instructor consent

TRES 5201. Integrated Ecosystems Stewardship 1. (; 3 cr.; A-F or Audit; Every Fall)
This course is the first in a series of two that will provide the student with the understanding of the biological, chemical, and physical processes necessary to support Native American ways of life in balance with pressures of economic development. Specific topics in this course may include wildlife management, range management, land use planning, terrestrial food webs, sustainable agriculture/forestry practices, assessment of air quality, biodiversity, and land use planning. Concept so energy stewardship on tribal lands will be explored. Carbon-based energy resources, with emphasis on coal
and petroleum/gas; fundamentals of nuclear energy; technology of extraction, production, refinement, consumption, and byproduct treatment/disposal; importance of carbon-based energy in global industrialization; limits of population growth imposed by energy requirements? principles and associated technologies of renewable energy and energy conversion, with focus on solar, geothermal, tidal, and biofuel energy resources. pre-req: TRES 5201

TRES 5301. Tribal Natural Resource Economics. (3 cr.; A-F or Audit; Every Fall) Through consideration of multiple perspectives regarding value and exchange, this course pursues micro- and macroeconomic analyses of natural resources under tribal stewardship. Key topics can include modes of valuation, resource markets, sustainability, pollution control, benefit-cost analysis, air and water quality, waste management, and conservation. pre-req: admission to MTRES program or instructor consent

TRES 5400. Directed Project Seminar. (1 cr.; A-F or Audit; Every Fall) This course provides students an opportunity to plan for their directed project and receive feedback on written and oral communication skills. Students plan and submit the directed project for approval as part of this course. pre-req: TRES 5102, admission to MTRES program or instructor consent

TRES 5994. Tribal Natural Resource Stewardship Directed Project. (3 cr.; S-N only; Periodic Fall, Spring & Summer) Tribal Natural Resource Stewardship Directed Project pre-req: MTRES student

Urban and Regional Studies (URS)

URS 1001. World Cities: An Introduction to Global Urbanization. (SOC SCI,GLOBAL PER; 3 cr.; A-F only; Every Spring) This course explores the phenomenon of urbanization with a focus on how different regions and cultures around the world are responding to urban growth. Taught from an interdisciplinary perspective, this course will examine the historical and contemporary causes of urbanization with a special emphasis on how urban policy makers and community residents are working to solve the problems created by metropolitan development. Particular attention will be paid to economic globalization, housing political representation, migration, and ecological sustainability. While in 1950 only 30% of the world's population was urban, now over 50% of the earth's population lives in cities - with much of that growth coming from cities in the developing world. This course investigates the forces behind this incredible rate of urban growth and grapples with the problems and possibilities created by global urbanization. pre-req: none

URS 3097. Internship in Urban and Regional Studies. (1-6 cr.; max 8 cr.; S-N only; Every Fall, Spring & Summer) Scheduled assignments with direct supervision in public agencies or relevant private firms. prerequisite: URS major, jr or sr, instructor consent

URS 3991. Independent Study in Urban and Regional Studies. (1-4 cr.; max 6 cr.; S-N only; Every Fall, Spring & Summer) For students interested in doing advanced work in urban and regional studies. prerequisite: instructor consent

URS 4001. Cities and Citizenship. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course explores the relationship between urbanization and democracy by examining how urban policy is created in cities around the world. The course examines the questions given the increasing pace of urban growth and the growing multiculturalism in cities around the world, how are cities responding, and how do community voices being included in the decision making process? Particular attention will be paid to infrastructure, transportation, participatory democracy, sustainability and urban resiliency, urban activism, tensions between the urban, national, and global scales, multiculturalism, and modernization. no grad credit

Water Resources Science (WRS)

WRS 5050. Special Topics in Water Resources Science. (1-3 cr.; A-F or Audit; Periodic Fall & Spring) Special topics in Water Resources Science

WRS 5101. Water Policy. (3 cr.; A-F or Audit; Every Fall) Socio-cultural, legal, and economic factors that affect water resources management. Historical trends in water policy, resulting water laws in the United States, Federal state and local institutional structures for water management. prerequisite: Grad student or instructor consent; credit will not be granted if already received for CE 5201

WRS 5060. Directed Studies in Water Resources Science. (1-3 cr.; max 6 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Directed studies in water resources science. prerequisite: instructor consent

WRS 8095. Plan B Project. (3 cr.; S-N or Audit; Every Fall & Spring) Satisfies Plan B project requirement. May appear on master's program, but does not count toward credit minimum in major. Project topic arranged between student and adviser. Written report required. prerequisite: instructor consent

WRS 8100. Interdisciplinary Seminar in Water Resources. (0.5-3 cr.; S-N only; Every Fall) Interdisciplinary seminar in water resources science. prerequisite: Graduate student

WRS 8333. FTE: Master's. (1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) prerequisite: Master's student, adviser and DGS consent

WRS 8444. FTE: Doctoral. (1 cr.; No Grade Associated; Every Fall, Spring & Summer) (No description) prerequisite: Doctoral student, adviser and DGS consent

WRS 8581. Research and Professional Ethics in Water Resources and Environmental Science. (0.5 cr.; S-N only; Every Spring) Ethics of water resources science and environmental engineering research/practice. Societal responsibility, plagiarism, record-
keeping, authorship, confidentiality, conflicts of interest, professional relationships, fraud, reporting misconduct. prereq: Graduate student

WS 8666. Doctoral Pre-Thesis Credits. (1-6 cr. [max 12 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 6 cr per semester or summer; doctoral student who has not passed prelim oral; no required consent for the first two registrations up to 12 cr; departmental consent for third and fourth registrations up to an additional 12 cr, or 24 cr total (for doctoral students admitted summer 2007 and beyond; doctoral students admitted prior to summer 2007 may register up to 4 times totaling 60 cr)

WS 8777. Thesis Credits: Master's. (1-18 cr. [max 50 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 18 cr per semester or summer; 10 cr total required (Plan A only)

WS 8888. Thesis Credits: Doctoral. (1-24 cr. [max 100 cr.]; No Grade Associated; Every Fall, Spring & Summer) (No description) prereq: Max 18 cr per semester or summer; 24 cr required

Women's Studies (WS)

WS 1000. Introduction to Women's and Gender Studies. (SOC SCI,CDIVERSITY; 3 cr. ; A-F or Audit; Every Fall & Spring) Introduction to discipline of Women's Studies - key concept, issues, and debates. Examination of the interaction of gender with class, race, ethnicity, sexual orientation, ability, and geographic location; and the way each of these is socialized. Examination of historical and current national and transnational issues as they relate to women and gender, and of the institutions that shape and impact women and gender roles and relations, including academia. Critical analysis skills.

WS 2001. Introduction to Lesbian Gay Bisexual and Transgender Studies. (CDIVERSITY; 4 cr. ; A-F or Audit; Periodic Fall) Examines identity politics, LGBT popular media images and analysis, birth and history of LGBT social movement and intersections with other social movements, HIV/AIDS, policy/legislative issues especially immigration, marriage, adoption, and U.S. military policy; all with international comparative analysis. prereq: credit will not be granted if already received for CST 2001

WS 2101. Women, Race, and Class. (CDIVERSITY,SOC SCI; 3 cr. ; A-F or Audit; Every Fall & Spring) Racism, sexism, and classism are major factors which have influenced human relations from past to present. This course examines how the social-historical construction of race, class and gender continues to affect the experience of all people in particular people of color. This course seeks to enable students to understand the processes through which these social oppressions are created, normalized, internalized, maintained and perpetuated. A core element to this course is provoking students to recognize their own contribution in perpetuating oppressive systems, and their responsibility creatively to develop individual and collective acts of resistance to all of the "isms" and to societal transformation towards the just society.

WS 3000. Transnational Perspectives on Feminism. (GLOBAL PER,SOC SCI; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Examination of feminist movements worldwide. Focuses on feminist theories and research, and feminist non-governmental organization in a transnational perspective, and specifically on the effects of and resistance to such realities as racism, neo-colonialism, nationalism, imperialism, militarization, globalization, poverty, war, reproductive control, and violence against women in its many manifestations. prereq: 1000 or 2101 or instructor consent

WS 3001. Gender Relations in the Global South. (GLOBAL PER; 3 cr. ; A-F or Audit; Every Fall & Spring) Using comparative historical, political, socioeconomic and feminist perspectives this course critically examines how factors such as colonialism, imperialism, and globalization continue to impact, construct, and reconstruct gender relations in post-colonial cultures with adverse consequences for women in Third World countries. It also examines how conditions in Third World countries are shaped by global economic systems, which lead to massive migrations of Third World women into the United States. It critically evaluates the concepts of universal subordination, particularly, a consciousness which categories women in the Global South as "overall victims," the other, or exotic.

WS 3002. Latin American Women: Culture and Politics. (3 cr. ; A-F or Audit; Periodic Spring) Examination of contemporary economic and socio-political issues affecting Latin American women. prereq: 1000 or 2101 or instructor consent

WS 3080. Cultural Constructions of the Body. (4 cr. ; A-F or Audit; Every Fall & Spring) Contemporary cultural constructions of the human body. How biology and culture intersect in body building, menstruation, childbirth, and tattooing. Students gain skills in reading the body as social text and learn core theoretical approaches to cultural studies of the body. prereq: Minimum 30 credits or instructor consent; credit will not be granted if already received for CST 3080

WS 3100. Feminist Thought. (CDIVERSITY,HUMANITIES; 4 cr. ; A-F or Audit; Every Fall) Examination and analysis of central ideas and concepts within diverse feminist theories - liberal, socialist, radical, multicultural, postcolonial, ecofeminist, lesbian, maternalist, and others - historical and contemporary. Theoretical debates surrounding issues of the bases of women's liberation and oppression; the nature and construction of gender, sexuality, and the body; feminist epistemologies; and ethical issues within feminism. prereq: 1000 or 2101, 45 cr or instructor consent

WS 3150. Women-Identified Culture. (CDIVERSITY; 3 cr. ; A-F or Audit; Every Spring) Chronological survey introducing a relatively new body of knowledge in women's studies about lesbian cultures. Lesbian studies in literature, history, law, sociology, aesthetics, and philosophy; international perspectives.

WS 3200. Women's Autobiographies. (GLOBAL PER; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Women's self-concepts as expressed in autobiographical writings. Meanings women give their lives as women; impact of race and class; choices for artistic, political, intellectual, and/or private lives. Autobiographical techniques and style.

WS 3250. Women, Peace and War. (GLOBAL PER; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Feminist analysis of war and peace; debates regarding the gendered nature of war and peace; analysis of the interrelationships of patriarchy, masculinity, and militarism. Women's role in warfare as soldiers, mothers, wives, munitions makers, etc. and effects of war on women including disease, displacement, rape, trafficking and prostitution, etc. Feminism and peace: Feminist peace activism and peacemaking efforts. prereq: 1000 or 2101 or 3750 or 3775 or instructor consent

WS 3300. Women and Spirituality. (CDIVERSITY,HUMANITIES; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Issues of spirituality, particularly as they relate to women, but inclusive of all genders. Examination of the impact of gender on spirituality, as well as the nature of women's diverse spiritual experiences, practices, and paths. Non-sectarian, though inclusive of multicultural religious traditions, goddess, Jungian, and earth-based perspectives. The course includes conceptual and textual analyses, as well experiential learning and practices.

WS 3350. Women and the Law. (CDIVERSITY; 3 cr. ; A-F or Audit; Periodic Fall & Spring) Examination of how U.S. laws have and continue to affect women's and men's lives on the basis of gender, with particular attention to their impact on women. Examination of current legal issues, including gender equity in education and employment, marriage and family relationship’s violence against women, and reproductive issues. Feminist jurisprudence, evaluation, and analysis of the laws from various feminist perspectives.

WS 3400. Women and Film. (GLOBAL PER; 3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) American and foreign films screened, analyzed, and reviewed from a feminist perspective. Role
of women in history, economics, and politics of filmmaking.

**WS 3450. Motherhood and Mothering: Institution and Experience.** (3 cr.; A-F only; Periodic Spring)

An examination of the institution, experience, and practices of motherhood and mothering, including the social, legal, medical, cultural, and economic factors shaping motherhood in the U.S. and feminist analyses of the experience and practice of mothering across cultures. prereq: 1000 or 2101 or instructor consent

**WS 3455. American Indian Women.** (CDIVERSITY; 3 cr.; A-F or Audit; Fall Odd, Spring Even Year)

American Indian women in tribal societies before and after European contact; Indian women as stewards of knowledge, tradition, and society; impact of colonization; traditional and contemporary female leadership. pre-req: minimum 30 credits; credit will not be granted if already received for AMIN 3250.

**WS 3595. Special Topics: (Various Titles to Be Assigned).** (1-4 cr. [max 9 cr.]; A-F or Audit; Periodic Fall & Spring)

Topics that fall outside current women’s studies courses. Topic announced before course offered. prereq: 1000 or instructor consent

**WS 3600. Ecofeminism: Theories and Sustainable Practices.** (SUSTAIN; 3 cr.; A-F or Audit; Spring Even Year)

In-depth study of ecoliteracy theories that explore the interlocking oppressions of women, the earth/nature/other animals, and colonized Others. Scientific, economic, religious, philosophical issues examined. Applied ecofeminist analysis of individual, local, regional, national and transnational ethical, social and environmental issues, such as food and farming, animals, toxins, birthing and reproductive technologies, water quality, and privatization, etc. prereq: 1000 or 2101 or instructor consent

**WS 3628. Women in Cross-Cultural Perspective.** (3 cr.; A-F or Audit; Periodic Fall & Spring)

Cross-cultural survey of gender systems, focusing on contemporary women’s lives around the world. prereq: minimum 30 credits

**WS 3700. Women and Love.** (3 cr.; A-F or Audit; Periodic Spring)

Feminist analysis of the role of love in women’s lives, the interrelation of love, sex, freedom, power and gender. Examination of forces that shaped gender roles, advertising, mass media, literature, music, poetry, philosophy and cinema. Analysis of love including perspectives of ethnicity, class, age, and disability.

**WS 3750. Voices of African Women.** (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Spring)

This course critically examines African women's daily-lived experiences. It explores the impact of global, historic, economic, and political forces, such as colonialism, neocolonialism, and current globalization impacts on their lives. This course studies the challenges of universalizing Western feminism, as a panacea to Africa’s problems. Using African eyes through African voices in texts, novels films photograph and living history. African women will be studies as knowing subject, social actors, and change agents but not as universal victims. Differences between women on the basis of class, ethnicity, religion, age sexuality, rural/urban residence, levels of education and marital status will be examined. The course will explore the rich diversity of African cultures, peoples, and natural resources. It will answer such important question as Why are African women portrayed as the poorest of the poor, victims of their cultures, traditions and African male sexism?

**WS 3775. Gender, Globalization and Food.** (SUSTAIN; 3 cr.; Student Option; Periodic Spring)

This course offers a critical feminist examination of the impact of globalization and economic restructuring on the tangled roots and route of women’s work in the food chain in both the First World and Global South. The course also offers firsthand experiences by visiting origins of food, small and large-scale farms, community gardens, organic food stores and large corporate food chain stores as well as preparing meals from ingredients that students select based on tastes and affordability. Additionally, the course brings globalization to our doorsteps through meals that students prepare and serve by answering the question What is on your plate for dinner, lunch, or breakfast, and from what countries and whose labor? Finally, the course offers in-depth analysis of the processes through which current corporate industrial mega farms lead to hunger and water famine, environmental degradation and poor health, not only the Third World but also in the First World.

**WS 3800. Feminist Activism and Community Organizing.** (4 cr.; A-F or Audit; Every Spring)

In-depth exploration of feminist activism from practical, scholarly and historical perspectives. Integration of theory and practice on local, national and international levels. History of feminist movement, and skills, strategies, and resources for effective feminist community organizing. Understand and participate in coalition building, nonviolent communication, cross-cultural dialogue, public policy process, feminist leadership skills. Field work component. prereq: 1000 or 2101

**WS 3891. Independent Study.** (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)

Directed readings, research, and/or projects on topics of interest to the student not covered in regular course offerings. Students contract with an individual faculty member. prereq: 1000 or 2101, instructor consent

**WS 3894. Women’s Rights in Italy.** (3 cr.; A-F only; Periodic Spring)

Taught on site in Italy. Experience and learn about local women’s lives through fieldwork involving community visits, presentations by grassroots women, community-service work, reading, and follow-up writing and discussion. Participants will gain first-hand experience and understanding of domestic violence, including knowledge of response and prevention in Italy. The program will maintain a substantive focus on the themes of gender, art, well-being and community empowerment. A foundation of knowledge will be offered in terms of cultural diversity theory and competency models applied to an understanding of the diversity of artistic language, symbolism, and art-making process across cultures. prereq: Minimum 2.5 GPA, minimum 60 credits, admission to an approved study abroad program requires consent from the International Education Office.

**WS 3897. Internship.** (1-9 cr.; S-N or Audit; Every Fall, Spring & Summer)

Work in public agency, private organization, or service agency offering practical application of women’s studies theories and/or experience not available in classroom. Students must contract with an individual faculty member and with a site supervisor, set goals, fulfill requirements for credit earned, and submit written and oral evaluations of experience. Consult the Women’s Studies website and internship Moodle site for information on local agencies and internship requirements and forms. prereq: 1000, 2101, 3100. 15 cr WS or WS-related courses, WS major or minor, 53 cr, instructor consent

**WS 4000. Seminar.** (4 cr.; A-F or Audit; Every Spring)

Senior capstone project, as well as examination and application of feminist inquiry and research methodologies. Seminar topic varies, to be determined by students in seminar and/or instructor. prereq: 1000, 2101, 3100, 15 cr WS or WS-related courses, WS major or minor, or instructor consent

**WS 4323. Women and Justice.** (3 cr.; A-F or Audit; Periodic Fall & Spring)

Women’s involvement in the civil and criminal justice systems, both historic and contemporary, primarily in the United States. Attention given to women as criminal and civil defendants, issues of women’s civil rights, and to women practitioners within each system. Intersection of social class, gender and race/ethnicities. prereq: 1301 or SOC 1101 or CSt 1101 or Anh 1604, 60 credits, or instructor consent, no grad credit

**WS 4925. Sociology of Rape.** (3 cr.; A-F or Audit; Every Spring & Summer)

Social, moral, and legal definitions and implications of rape, prereq: SOC 1101 or CRIM 1301 or CSt 1101 or Anh 1604 or WS 1000, 60 cr, or instructor consent

**WS 4947. Sociology of Gender Identities and Systems.** (3 cr.; A-F or Audit; Periodic Fall & Spring)

Status and experiences in society through the exploration of gender identities, systems, and social structures. Topics include politics, discrimination, family, education, workplace, popular culture, and changing definitions of gender. Emphasis on the expectations and performance of masculinity/femininity and the
Students will scrutinize film, journalism, podcasts, comics, and interactive experiences for language play, genderspeak, teenspeak, emerging changes in use, and representation of time and perspective.

**WRIT 2506. Introduction to Writing Studies.** (3 cr.; A-F or Audit; Periodic Fall & Spring)

Consider writing itself as both a practice and an object of study. Drawing on composition, journalism, linguistics, literary studies, and rhetoric, the course offers a survey of historical, critical, and theoretical issues in writing studies. Writing assignments ask students to apply a writing studies framework to produce and analyze specific texts. prereq: 1120

**WRIT 2595. Special Topics: (Various Titles to Be Assigned).** (1-4 cr.; max 6 cr.; A-F or Audit; Periodic Fall & Spring)

Study of rhetoric or composition topics not focused on in regular lower-division composition courses or related offerings. Topic announced before course offered. prereq: WRIT 1120 or equivalent or instructor consent

**WRIT 3100. Advanced Writing: Language and Literature.** (3 cr.; A-F or Audit; Every Fall & Spring)

Study and practice of reading and writing about literature—poetry, fiction, drama, and creative non-fiction. Seeks to advance critical reading and analytical skills as a means to improving a student's proficiency in the conventions of academic and professional discourses, including grammar, style, organization, argumentation, and documentation. Addresses career documents, proposals, and grant writing. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3110. Advanced Writing: Arts and Letters.** (3 cr.; A-F or Audit; Every Fall & Spring)

Study and practice of writing tasks appropriate for the arts and letters. Seeks to advance research and critical writing skills as well as skills in applying conventions of grammar, style, argumentation, and documentation. In addition, the course addresses professional writing for the arts, including reviews, proposals, grant writing, and career documents. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3121. Advanced Writing: Business and Organizations.** (3 cr.; A-F or Audit; Every Fall & Spring)

Study and practice of writing tasks in business and organizations, including oral presentations. Exploration of rhetorical situations in professional practice, including research methods, document design, editing, effective collaboration, and ethical issues in the production of professional documents, such as instructions, lab reports, proposals, short and long reports, and career documents. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3130. Advanced Writing: Engineering.** (3 cr.; A-F or Audit; Every Fall & Spring)

Study and practice of writing tasks in engineering, including oral presentations. Exploration of rhetorical situations in professional practice, including research methods, document design, editing, effective collaboration, and ethical issues in the production of professional documents, such as instructions, lab reports, proposals, short and long reports, and career documents. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3140. Advanced Writing: Human Services.** (3 cr.; A-F or Audit; Every Fall, Spring & Summer)

Study and practice of writing tasks in education as well as other fields related to the human service professions. Designed to prepare students to master their use of Edited Standard Written English while producing professional documents, including a major research project with an oral presentation. Assignments focus on audience, purpose, and the process of writing as they relate to the human service professions. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3150. Advanced Writing: Science.** (3 cr.; A-F or Audit; Every Fall, Spring & Summer)

Study and practice of writing tasks in science, including oral presentations. Exploration of rhetorical situations in professional practice, including research methods, document design, editing, effective collaboration, and ethical issues in the production of professional documents, such as instructions, lab reports, proposals, short and long reports, and career documents. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3160. Advanced Writing: Social Sciences.** (3 cr.; A-F or Audit; Every Fall, Spring & Summer)

Study and practice of writing for those whose professional interests are in sociology, anthropology, geography, criminology, psychology, women's studies, history, political science, and similar fields. Assignments center on producing documents encountered in the workplace, such as career documents, proposals, research projects, oral presentations, observational studies, and position papers. pre-req: 1) WRIT 1120 or MNTC completed 2) minimum 60 credits earned

**WRIT 3180. Honors: Advanced Writing.** (3 cr.; A-F only; Periodic Fall & Spring)

Develops research, critical thinking, and collaborative writing strategies as well as rhetorical skills to draft documents in multiple genres for multiple audiences. This includes professional correspondence and reports, research proposals, literature reviews, oral presentations and related documents for the honors project. prereq: min 60 cr, UMD Honors Program, or instructor consent

**WRIT 4100. Introduction to Grant Writing and Project Planning.** (3 cr.; A-F or Audit; Periodic Fall & Spring)

Introduction to basic grant writing principles, including common types of grants, project planning, locating and researching funders, and writing effective narratives, preparing budgets, and evaluating program outcomes. Course
WRIT 4197. Internship in Writing. (1-3 cr. [max 6 cr.]; S-N only; Every Fall, Spring & Summer)
Practical writing experience with a media organization, publisher, business, or government agency. prereq: instructor consent, no grad credit

WRIT 4200. Writing and Cultures. (3 cr.; A-F or Audit; Spring Odd Year)
Through historical, theoretical and applied lenses, examines the dialectic between writing and culture, that is, how writing shapes culture and, conversely, how culture shapes writing. Specific concepts (access, agency, community, identity and power) relevant to understanding how cultures and the social relations that constitute them are constructed and maintained will be examined in detail. prereq: 1120, minimum 60 cr

WRIT 4220. Document Design and Graphics. (3 cr.; A-F or Audit; Periodic Spring)
Principles and practice of using computer programs to design, create, and print documents that effectively integrate verbal and graphic texts. prereq: 1120, min 60 cr, no grad credit

WRIT 4222. Electronic Publication. (4 cr.; A-F or Audit; Periodic Fall)
Introduces students to recent developments in the creation of books, journals and newsletters in electronic form and acquaints them with the conversion of print into electronically distributed form.

WRIT 4230. Web Design and Digital Culture. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Practice in the aesthetic, cultural, and rhetorical uses of Web-design techniques, including discussion and writing about the theoretical and historical contexts of digital culture. prereq: Min 30 cr, no grad credit

WRIT 4250. New Media Writing. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Combines the theory and production of new media writing--digital, verbal practices in converged media--through the application of readings and discussion to five projects that progress from written, print-based genres to new-media presentation. prereq: minimum 60 cr, no grad credit

WRIT 4260. Visual Rhetoric and Culture. (3 cr.; A-F only; Every Fall)
In addition to teaching the mechanics of graphic production, this class draws widely on the disciplines of digital design, statistics, narrative literature, engineering, and technical writing to enable students to conceive, produce, and write about visual texts critically and effectively. prereq: minimum 60 cr, no grad credit

WRIT 4300. Research Methods for the Study of Writing. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Provides students with instruction and practice in critiquing research, generating research questions, designing research projects, and reporting research results in the study of writing. prereq: 1120, min 60 cr, no grad credit

WRIT 4506. Capstone Course: Senior Portfolio Preparation. (1 cr.; S-N or Audit; Every Fall & Spring)
Required capstone course for all writing studies majors. Portfolios for multiple purposes will be prepared under the guidance of the student's adviser. prereq: Min 90 cr, writing studies major

WRIT 4591. Independent Study. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Students choose projects with their instructor. prereq: instructor consent, no grad credit

WRIT 5100. Introduction to Grant Writing and Project Planning. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Introduction to basic grant writing principles, including common types of grants, project planning, locating and researching funders, and preparing effective narratives and budgets. Course utilizes lectures, discussion, group work, and guest speakers. prereq: Credit will not be granted if already received for Comp 5100, Coll Grad or Grad student

WRIT 5197. Internship in Writing. (1-3 cr.; S-N only; Every Fall, Spring & Summer)
Practical writing experience with a media organization, publisher, business, or government agency. prereq: instructor consent, Coll Grad or Grad student

WRIT 5220. Document Design and Graphics. (3 cr.; A-F or Audit; Every Spring)
Principles and practice of using computer programs to design, create, and print documents that effectively integrate verbal and graphic texts. prereq: Credit will not be granted if already received for Comp 5220, max 3 cr may be applied to Grad prog

WRIT 5230. Web Design and Digital Culture. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Practice in the aesthetic, cultural, and rhetorical uses of Web-design techniques, including discussion and writing about the theoretical and historical contexts of digital culture. prereq: Credit will not be granted if already received for Comp 5230, Grad student

WRIT 5250. New Media Writing. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Combines the theory and production of new media writing--digital, verbal practices in converged media--through the application of readings and discussion to five projects that progress from written, print-based genres to new-media presentation. prereq: Credit will not be granted if already received for WRIT 4250, Grad student

WRIT 5260. Visual Rhetoric and Culture. (3 cr.; A-F only; Every Fall)
In addition to teaching the mechanics of graphic production, this class draws widely on the disciplines of digital design, statistics, narrative literature, engineering, and technical writing to enable students to conceive, produce, and write about visual texts critically and effectively.

WRIT 5300. Research Methods for the Study of Writing. (3 cr.; A-F or Audit; Periodic Fall & Spring)
Provides students with instruction and practice in critiquing research, generating research questions, designing research projects, and reporting research results in the study of writing. prereq: Coll Grad or Grad student

WRIT 5591. Independent Study. (1-3 cr. [max 6 cr.]; Student Option; Every Fall, Spring & Summer)
Students choose projects with their instructor. prereq: College grad or grad student. credit will not be granted if already received for Comp 5591, max 3 cr may be applied to Grad prog, instructor consent

WRIT 8094. Plan B Research (DRS). (1 cr. [max 3 cr.]; S-N only; Every Fall, Spring & Summer)
Directed research to complete Plan B Project as required by the English MA program. prereq: instructor consent

WRIT 8902. Teaching College Writing. (3 cr.; A-F only; Every Fall)
Analyze theoretical works and study pedagogical principals and practices related to teaching academic writing in college, including methods, materials, and objectives. Includes a major research project as well as oral presentations and/or teaching demonstrations. prereq: Credit will not be granted if already received for COMP 8902, required for tchg assts in Writ and Engl Deps, instructor consent

WRIT 8910. Practicum in Teaching Writing. (1-4 cr.; A-F or Audit; Every Fall & Spring)
Teaching, tutoring, and assisting in composition courses; experience in preparation of materials, microteaching, and grading student work. prereq: Credit will not be granted if already received for ENGL 8910 or COMP 8910, instructor consent

WRIT 8994. Directed Research in Writing Studies. (1-3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Directed research in methods, materials, and theories (both linguistic and rhetorical) used in composition classes, sometimes involving experiments with composition students in secondary schools and colleges. prereq: Credit will not be granted if already received for COMP 8994; 8992; instructor consent