This document serves as an official historical record for a specific period in time. The information found is subject to change without notice. Colleges and departments make changes to their degree requirements and course descriptions frequently. More information is available at catalogs.umn.edu.

For current information, refer to:

- Program search: z.umn.edu/publicprogramsearch
- Course search: z.umn.edu/publiccoursecatalog
- University policies: policy.umn.edu
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCT 2001</td>
<td>Principles of Financial Accounting</td>
<td>A-F only</td>
<td>15 credits or college consent</td>
</tr>
<tr>
<td>ACCT 2002</td>
<td>Principles of Managerial Accounting</td>
<td>A-F only</td>
<td>15 credits or college consent</td>
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<tr>
<td>ACCT 3001</td>
<td>Technology Tools in Accounting</td>
<td>A-F only</td>
<td>1 credit = 100 hour minimum 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 internshia contract, assignments, and performance evaluations. LSBE majors that allow for only three (or fewer) credit hours of internship in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prerequisite: LSBE Candidate, Prior Major coursework, consent of Internship Director.</td>
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<tr>
<td>ACCT 3101</td>
<td>Intermediate Accounting I</td>
<td>A-F only</td>
<td>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. LSBE majors that allow for only three (or fewer) credit hours of internship in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prerequisite: LSBE Candidate, Prior Major coursework, consent of Internship Director.</td>
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<tr>
<td>ACCT 3102</td>
<td>Intermediate Accounting II</td>
<td>A-F only</td>
<td>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. LSBE majors that allow for only three (or fewer) credit hours of internship in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prerequisite: LSBE Candidate, Prior Major coursework, consent of Internship Director.</td>
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<td>ACCT 3201</td>
<td>Cost Accounting</td>
<td>A-F only</td>
<td>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. LSBE majors that allow for only three (or fewer) credit hours of internship in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prerequisite: LSBE Candidate, Prior Major coursework, consent of Internship Director.</td>
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<tr>
<td>ACCT 3301</td>
<td>Accounting Information Systems</td>
<td>A-F only</td>
<td>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. LSBE majors that allow for only three (or fewer) credit hours of internship in the Upper Division Supporting Courses category. Maximum credits: 6; 3 completions allowed Prerequisite: LSBE Candidate, Prior Major coursework, consent of Internship Director.</td>
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<tr>
<td>ACCT 3401</td>
<td>Individual Income Taxation</td>
<td>A-F only</td>
<td>Credit will not be granted if already received for 3096.</td>
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<tr>
<td>ACCT 3701</td>
<td>Small Business Initiative in Accounting</td>
<td>max 3 cr</td>
<td>Fall &amp; Spring</td>
</tr>
<tr>
<td>ACCT 3705</td>
<td>Volunteer Income Tax Assistance</td>
<td>S-N only</td>
<td>Every Spring</td>
</tr>
<tr>
<td>ACCT 3796</td>
<td>Internship in Accounting</td>
<td>A-F only</td>
<td>Every Fall, Spring &amp; Summer</td>
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<tr>
<td>ACCT 3151</td>
<td>Advanced Business Taxation</td>
<td>A-F only</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
</tr>
<tr>
<td>ACCT 3402</td>
<td>Fund and Not-For-Profit Accounting</td>
<td>A-F only</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
</tr>
<tr>
<td>ACCT 4510</td>
<td>Employee Benefit and Retirement Planning</td>
<td>A-F or Audit</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
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<tr>
<td>ACCT 4795</td>
<td>Special Topics</td>
<td>A-F only</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
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<td>ACCT 5402</td>
<td>Advanced Business Taxation</td>
<td>A-F or Audit</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
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<td>ACCT 5501</td>
<td>Advanced Accounting</td>
<td>A-F or Audit</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
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<td>ACCT 5505</td>
<td>International Accounting</td>
<td>A-F or Audit</td>
<td>Credit will not be granted if already received for ACCT 3151 or 3402; no grad credit.</td>
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</tbody>
</table>
Aerospace Studies (AIR)

AIR 1000. AFROTC GMC 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; officership; 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; officership; 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. prereq: 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. prereq: No grad credit

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 contemporary African American issues and issues of slavery: black oppression; powerlessness and marginality. Black agitation for civil and economics rights; African American social, cultural, economic, and political thoughts; the persistency of structural racial inequalities on blacks; closing the gap of inequality; future of black America. pre-req: credit will not be granted if already received for AAAS 1100

AAAS 3005. Roots and Rebellion: Study Abroad in Jamaica. (GLOBAL PER; 3 cr.; A-F only; Periodic Spring & Summer) This three week study abroad course draws on history, literature, cultural studies, and music to explore Jamaican resistance to colonialism and slavery. Students will explore Jamaican culture first hand by visiting cultural heritage sites that attest to the Jamaican experiences of oppression, resistance, and rebellion. Presentations by local community leaders and heritage professionals will bring the history and culture of Jamaica alive for students. pre-req: consent of the International Programs and Services office

AAAS 3091. Independent Study. (; 1-3 cr.; A-F only; Every Fall, Spring & Summer) Independent research with a faculty member. pre-req: instructor consent

AAAS 3095. Special Topics: (Various Titles to be Assigned). (; 3 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer) Various topics in African and African American Studies

AAAS 3201. The African American Family. (; 3 cr.; A-F or Audit; Every Spring) This course is about the past and current structure of the African American family. It traces the development and formation of the African American family beginning from the period of slavery through emancipation, reconstruction, and the post-Obama modern era. The course will feature the patterns and trends in African American family formation, marriage, family life, single parenthood, issues affecting black children and youth, the roles of matriarchs, relationships between black men and women, and the impact of economic and political forces on urban and rural black family life. Attention is given to class and the socioeconomic dynamics of African American life, the rise of the black middle class, the persistence of the urban underclass and the implications for America. The negotiation of bi-racial and multiracial black family identities is stressed, including the current formation of African American diaspora families. pre-req: 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 folklore 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 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.

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, intellectual issues and theories within 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 critically 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. pre-req: Credit will not be granted if already received for 1120.

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. pre-req: 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. pre-req: Credit will not be granted if already received for 1106.

AMIN 2015. Ojibwe History and Culture. (SUSTAIN; 3 cr.; A-F only; Periodic Spring) Anishinabe, Ojibwe, and Chipewa. Origins and lifestyle; relationship between traditional and contemporary times. Emphasis on Minnesota. Through spring 2015 this course will carry Liberal Education Cultural Diversity credit and effective fall 2015 it will carry Liberal Education Sustainability credit. pre-req: Credit will not be granted if already received for 2115.

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. pre-req: Credit will not be granted if already received for 2110.

AMIN 2405. American Indian Families and Society. (SOC SCI,CDIVERSITY; 3 cr.; A-F 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.; A-F 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.; 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.

AMIN 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.

AMIN 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-government. 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.; 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, oversen 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.]; A-F only; Every Fall, Spring & Summer) Directed reading, research, or experiential learning activity such as involvement in social action; work plan and assignments must be approved by instructor. prereq: instructor consent; maximum 10 credits

AMIN 3410. Fur Trade in Canada and the United States. (CDIVERSITY; 3 cr.; A-F 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.; A-F 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 adopted 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.; A-F 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.; 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. prereq: minimum 30 credits; credit will not be granted if already received for 3250.

AMIN 3620. Ojibwe Literatures: Sovereignty and Survivance. (CDIVERSITY; 3 cr.; A-F 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 3250.

AMIN 3660. American Indian Novel. (CDIVERSITY,HUMANITIES; 3 cr.; A-F 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.; 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.

AMIN 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: 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.; A-F 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. (3 cr.; [max 6 cr.]; S-N only; Every Fall, Spring & Summer) Supervised experience in a workplace relevant to a student's academic and career interests; work plan and assignments must be approved by instructor. prereq: American Indian Studies major, completion of at least 90 credits and instructor consent

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 shrewdly 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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
about the origins of federal judicial power and their application indigenous peoples. prerequisite: 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 will be discussed and analyzed. 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. Minimum 60 cr, no grad cr; credit will not be granted if already received for EDUC 4081/5081

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 agreement, the ambiguities and problems in indigenous-state diplomacy and treaty litigation. prerequisite: 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. prerequisite: 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. prerequisite: 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 explore contemporary issues, challenges, and opportunities for tribal governments and consider innovative administrative/governance approaches. The significance of how external decisions by the federal or state government might impact tribal decision making will be examined.

AMIN 4990. Directed Research in American Indian Studies. (3 cr.; max 6 cr.; A-F only; Every Fall, Spring & Summer) American Indian Studies majors may register for advanced study and individual research on a selected topic or theme in American Indian Studies. prerequisite: American Indian Studies major, completion of at least 90 credits and instructor consent. No graduate credit.

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. prerequisite: 60 credits; credit will not be granted if already received for AMIN 4081/EDUC 4081

American Sign Language (ASL)

ASL 2001. Beginning American Sign Language I. (COMM & LAN; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Introduction to basic vocabulary in American Sign Language and the fingspelling alphabet. prerequisite: 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 Fall, Spring & Summer) 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. prerequisite: 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. prerequisite: 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. prerequisite: 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 & Spring) 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. prerequisite: 4004 or instructor consent; no grad credit

ASL 4100. Linguistics of American Sign Language. (3 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. prerequisite: 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. Interrelationship 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. prerequisite: no grad credit

ASL 4110. Deaf Culture. (3 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
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.
prereq: Minimum 30 credits or instructor consent; credit will not be granted if already received for CST 3080

**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)
Introduction to 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 cli-scifi 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)

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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. preq: 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 globalization. preq: 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 and the impact of cities on the environment. Liberal Education sustainability credit will be effective fall 2015. preq: 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 relocated 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 India, China, 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. preq: 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. preq: 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 painting, 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 fall of the semester. preq: 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 rights 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. preq: 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. preq: 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. preq: minimum 60 credits or instructor consent; 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. preq: 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. preq: 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 interrelationships of certain human populations with their environments in diverse natural, cultural, historical, and evolutionary settings. preq: 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. preq: minimum 60 credits or grad student or instructor consent

ANTH 4633. Ethnobotany. (SUSTAIN; 4 cr.; A-F only; Periodic Fall & Spring) 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. preq: 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. preq: minimum 60 credits or grad student, or instructor consent

ANTH 4644. Anthropology of Law. (4 cr.; A-F or Audit; Spring Odd Year) 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. preq: 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. preq: 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 cr

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; maximum 3 credits between ANTH 4907 and 4910

ANTH 4955. Forensic Anthropology. (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. prereq: CHE 3231 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 of 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. prereq: 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. prereq: MS AMS candidate, instructor consent

Art (ART)

ART 1001. Art Today. (FINE ARTS; 3 cr.; A-F or Audit; Every Fall & Spring) Introductory survey of influence of art and roles of artists in varied sociocultural contexts, emphasizing recent 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 creative 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 identify 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 biominicry, are among the practices that will be introduced, discussed and critiqued. Through active learning methods, including journaling, collaging, photographing and working in Paris 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 Design or 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 BBA or art...
ART 1012. 2-D Design. (3 cr.; A-F or Audit; Every Fall & Spring)
Introduction to basic concepts and materials of two-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: Not for art majors or minors

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 semantic 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 3125

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 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 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)
This course provides an introduction to the fundamental of digital art studio practice with an introduction to digital imaging and cross-media 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: 1900 or 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 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 short narrative works. Creative studio art approach to low budget film techniques and project collaboration. Individual and team projects include visual concept development, storyboarding, video production, and digital editing. Emphasis on the visual language of filmmaking and critical appreciation of cinematic media. prereq: 2900 or Journalism major or film minor or instructor consent

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, or art or 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, or art or education major or art minor or instructor consent; credit will not be granted if already received for 1200

ART 2300. Printmaking I: Intaglio, Relief. (3 cr.; A-F or Audit; Every Fall)
Introduction to methods and materials used in zinc plate etching and relief printing from wood and linoleum. Technical, aesthetic, and contextual considerations encountered in production of meaningful artwork. Theoretical, legal, critical, and historical aspects of printmaking. prereq: 1006 or 1009 or 1010, 1011, ar art or education major or art minor or instructor consent

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
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

**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 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 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.** (FINARTS; 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

**ART 2905. Design Technology I.** (3 cr.; A-F or Audit; Every Fall)
Fundamentals of graphic reproduction and Web site design; application of digital programs used in preparing print and web work. prereq: 1013 and graphic design major or GDM BFA or pre-MGD BFA or GD BFA or arts in media minor or instructor consent; laptop required; digital instruction presented only on the Mac platform.

**ART 2906. Design Technology II.** (3 cr.; A-F or Audit; Every Spring)
Advanced concepts and digital program applications for print and web graphic contexts. prereq: 2905, graphic design major or GDM BFA or pre-MGD BFA or MGD BBA or instructor consent; laptop required; digital instruction presented only on the Mac platform.

**ART 2907. Typography I.** (3 cr.; A-F or Audit; Every Fall)
Introduction to fundamentals of typography in print and screen media. Presents terminology, history, and theories of letterforms. Students will perform directed assignments to develop typographic skills on computer and by hand. prereq: ART 1013 and Graphic design major or GDM BFA or MGD or pre-MGD BFA or digital arts and photography emphasis or instructor consent; laptop required; digital instruction presented only on the Mac platform.

**ART 2911. Graphic Design I.** (3 cr.; A-F or Audit; Every Spring)
Introduction to theory and practice of graphic design. Meaning and aesthetics of image juxtaposition; resonance of type and image. prereq: 2905, 2907, graphic design major or GDM BFA or pre-MGD BFA or MGD BBA or instructor consent; laptop required; digital instruction presented only on the Mac platform.

**ART 3031. Digital Arts: Installation and Collaborative Media.** (3 cr.; max 6 cr.; A-F or Audit; Every Fall & Spring)
Intermediate digital art studio course with a focus on interdisciplinary media and collaborative processes used to create site-specific installations and participatory art pieces. Reading and presentations discuss current trends in collaborative projects and key works by installation artists. Multimedia installation projects may include traditional art media, video projection, sound, and digital components. prereq: 2300, art or art education major, pre-art education major or pre-graphic design major, or art minor or instructor consent; credit will not be granted if already received for 5030

**ART 3040. Digital Filmmaking: Experimental Techniques.** (3 cr.; max 6 cr.; A-F or Audit; Periodic Fall & Spring)
Exploration of hands on experimental processes and techniques used in contemporary digital video and animation. Introduction to history and theory of experimental film and video works. Focus on digital video production, digital composting, digital animation techniques, and non-linear video editing skills. Emphasis on innovative, narrative, and non-narrative approaches to creative video projects. Discussion of audience 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 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: Inventing 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 means 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 Mac OS, prereq: 1013, 1607 or 2600, pre-DAP or Studio DAP 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 1009 or 1010, 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 only; 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 Fall & 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 develop 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, integrating 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. [max 9 cr.]; A-F or Audit; Every Fall & Spring) Individually supervised projects in electronic arts media. prereq: 2014 or 2018, art or art education major or 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 6 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 portfolios are complemented by a related research project. Requires digital camera with adjustable shutter speeds and apertures. 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 book projects, 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)
Graduate students complete a project by contract with instructor, supported by a research paper. Prereq: 2 semesters of photography, department consent

ART 4700. Drawing III. (3 cr. [max 6 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 agency, including the University. Prereq: Graphic Design major or Graphic Design concurrent registration is required (or allowed) in Marketing major or General StudiO BFA major or Art BA major, instructor consent; 1 cr. for each 45 hrs of fieldwork; no grad credit

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. Prereq: 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. Prereq: 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. Prereq: Art ed major and Educ 4500, EdSe 4600, EEd 4650; concurrent registration is required; no grad credit

ART 4907. Motion Graphics. (3 cr.; A-F or Audit; Every Fall)
Introduces aesthetics, mechanics, and meaning of motion graphics. Prereq: 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 5907; 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. Prereq: 3922, 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 5909; 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. Prereq: 4908, 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. Prereq: 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. Prereq: 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. prereq: 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. prereq: 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 prereq: 2 semesters work in graphic design and graphic design major and instructor consent

ART 4997. Art Museum Internship. (1-3 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer) Supervised practicum in art museum operation. prereq: 1001, 6 credits of ARTH, 1 credit for each 45 hours of work; instructor consent

Art History (ARTH)

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 2300. The City as a Work of Art. (HUMANITIES; 3 cr.; A-F only; Every Spring) The city as a work of art and center of culture. A study of artistic representations combined with references to primary texts. Use of case studies of particular urban centers to explore the rise of the city and the history of urban planning around the globe.

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. prereq: Art or Art Education major or Studio Art BFA or Graphic Design BFA or Graphic Design & Marketing BFA or Photography minor or instructor consent

ARTH 2892. Independent International Study. (GLOBAL PER; 1-3 cr. [max 6 cr.]; A-F or Audit; Periodic Summer) An elective course for students traveling abroad with an instructor outside of the United States. Includes art history lectures, site visits, scholarly readings, and assigned writings. Credits may also be granted for travel, research, and/or research and/or internships in/at international museums or at foreign sites. Requires advanced planning and final research paper/project. Credits granted depend upon nature and scope of project. prereq: Instructor consent; this course cannot be substituted for any course in the art history major or minor.

ARTH 2901. History of Graphic Design. (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. prereq: 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 nationalistic 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. (HUMANITIES; 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). Involves 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 3360. 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. (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 discords 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. (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 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

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. (ODIVERSITY; 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. prereq: 1040, Math 1250 or instructor consent

AST 2050. General Astronomy. (NAT SCI; 3 cr.; A-F or Audit; Fall Odd Year) An algebra-based introduction to astronomy and cosmology 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. prereq: 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. prereq: 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 prereq: 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. prereq: 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. prereq: Phys 2015 or 2018 or instructor consent

AST 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??? 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 (GEOG 2120 or 2312), minimum 60 credits. (Geological Sciences or Physics major or graduate student) or instructor consent.

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. prereq: 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. prereq: Registered med student, instructor consent

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. prereq: 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. prereq: instructor consent

BMS 4094. Directed Research in Pharmacology I. (1-10 cr.; A-F or Audit; Every Fall, Spring & Summer)
Directed Research in Pharmacology prereq: 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. prereq: 5601 or 3011 or equivalent

BMS 5101. 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 5201. Topics in Biochemistry. (3 cr.; A-F or Audit; Periodic Fall & Spring)
In-depth coverage and expansion of selected biochemical principles introduced in introductory undergraduate courses prereq: Chem 3322 or Chem 4341 or instructor consent

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. prereq: Biol 2102 or Biol 5231 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. prereq: Grad student, instructor consent

BMS 5211. Literature Seminar. (1-2 cr.; S-N or Audit; Every Fall & Spring)
Oral presentation of written literature review and research data reflecting student's research interests and thesis research results.

BMS 5292. Readings in Physiology. (1-3 cr.; A-F or Audit; Spring & Summer)
Topics in physiology selected for each student; written reviews prepared and discussed. prereq: instructor consent

BMS 5294. Research in Physiology. (1-15 cr.; A-F or Audit; Every Fall, Spring & Summer)
Introduction and use of lab techniques and equipment used for research in various subspecialties of physiology, including neurophysiology, cardiovascular physiology, endocrinology, respiratory and transport process, electrophysiology, and renal physiology. prereq: 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 disorders 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 Every 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. Grand Challenges in Physiology. (3 cr. [max 4 cr.]; A-F or Audit; Every Fall)
In dept examination of current physiological problems involving the major mammalian organ systems, integrating knowledge from the molecular to system level. prereq: BIOL 3703 or BIOL 3772 or EXSC 3400 or equivalent or graduate student 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

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
BIOL 1011. General Biology. (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) prerequisite: A grade of C- or better in 1011

BIOL 1170. Human Biology. (NAT SCI; 4 cr.; A-F or Audit; Every Spring)
This course offers an exploration of biological principles through the study of the structure, function, and heredity of the human body. Primarily we will cover basic cell structure, gene expression, organ systems, basic principles of heredity and inheritance of human traits. To understand these topics the fundamental concepts and principles of chemistry will be included. Through this course students with a basic science background will be able to expand their understanding of biology. Students will actively learn concepts with the laboratory component.

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. prerequisite: 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. prerequisite: A grade of C- or better in both 1011 and 1012, 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. prerequisite: 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) prerequisite: A grade of C- or better in both 1011 and 1012, CHEM 1114 or CHEM 1155 and 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. prerequisite: A grade of C- or better in 1011, 1012 and 2201 (concurrent registration is allowed for 2201)

BIOL 2410. 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 on the evolution 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 on location 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. prerequisite: 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. prerequisite: 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 microbiological issues they 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 prerequisite: 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 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. prereq: BIOL 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. prereq: 2101 or 2110 or 3100

BIOL 3301. Patterning 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. prereq: 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) prereq: A grade of C- or better in BIOL 1011, 1012, 2201 or IBS Grad student; credit will not be granted if already received for BIOL 2512

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. prereq: BIOL 3401 previous or 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 hrs lect, 4 hrs lab) prereq: 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. prereq: 1012; credit 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) prereq: 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 hrs lect, 2 hrs lab) prereq: 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 hrs lect, 4 hrs lab) prereq: 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) prereq: 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. prereq: 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. prereq: 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 (2hrs lect, 4hrs lab). prereq: 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.

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 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. prereq: 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. Introduction includes lectures, field and laboratory exercises, and reading and discussion. prereq: 1012

BIOL 3835. Freshwater Ecology. (3 cr.; A-F or Audit; Spring Even Year)
Exploration of freshwater habitats and their biological diversity with emphasis on how human behavior is affecting those habitats and biodiversity. prereq: 2801 or concurrent
BIOL 3987. 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. prereq: 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). (1-15 cr.; Student Option; Periodic Fall, Spring & Summer) Specific topics submitted for biology department review. Topic announced before course offered. prereq: 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. prereq: instructor consent required, biol or cell biol major, 90 cr and 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. prereq: 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 2100, CHEM 3322 or CHEM 4351 (concurrent registration is allow for CHEM 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 5233

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, morphogenesis, the formation of cell types, pattern formation, gene expression, regeneration, metamorphosis, 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; biological, 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 4804. Methods in Forest Ecology. (3 cr.; A-F or Audit; Fall Odd Year) Project based course that delves into methods for studying plant populations, succession, demographics and forest stand dynamics. Large portion of the class is field-based and will involve surveying vegetation, establishing and monitoring long-term plots and developing a management plan for selected field sites. Course will have two 50-minute lectures and a two-hour lab each week. pre-req: BIOL 2801 or IBS graduate 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 GEO 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. prereq: 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 ecosystems, 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. prereq: 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) prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 4231 or 4231 (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. This course has two 50 minute lectures and one 2-hour laboratory per week., prereq: 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) prereq: 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) prereq: 2101 or 3100 or 3095 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. prereq: 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. prereq: 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. prereq: 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, energetics, 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. prereq: (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, prereq: 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 patterns and processes. prereq: (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. prereq: 2801, 2802 or WRS or IBS Grad student

BIOL 5809. Ecological Statistics. (3 cr.; A-F only; Every Spring) Directed toward graduate students with previous introductory statistical experience,
this class covers common statistical methods used in ecology. The class includes classroom and computer lab components (using the R statistical computing environment) and provides students with the practical experience necessary to make decisions regarding the treatment and analysis of data, interpretation of statistical analyses and the presentation of study results. This course has one 2-hour lecture and one 2-hour laboratory per week. 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 include the identification of fish, zooplankton, benthos, and phytoplankton as well as field excursions to area lakes. prereq: 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) pre-req: 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. prereq: 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. prereq: 2801, 2802 or WRS or IBS Grad student

**Business (BUS)**

**BUS 2100. Fundamentals of Accounting.** (2 cr.; A-F or Audit; Every Spring) Introduction to financial and managerial accounting. Basic financial statement preparation. Basic decision making by managers using financial information. prereq: CUE major or BTAG or Business Administration Certificate or Pre-Civil Engineering or Civil Engineering or Pre-resilient Precast Concrete Engineering Certificate student 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; Every Spring) 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. prereq: BUS 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; Every Spring) 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. Concepts and techniques of financial and productivity processes, such as lean six-sigma will also be discussed. prereq: 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; Every Spring) 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. prereq: CUE major or BTAG or Business Administration Certificate or Museum Studies Certificate or pre-Civil Engineering or Civil Engineering major or Resilient Precast Concrete Engineering 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; Every Fall) 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. prereq: 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; Every Fall) 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. prereq: 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; Every Fall) This course introduces students to the discipline of marketing as it is practiced by organizations. Emphasis is on understanding how to best serve the consumer needs utilizing the most appropriate value proposition. The four P’s of marketing (product, place, price, and promotion) are introduced in the context of a globally competitive environment. prereq: 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; Every Fall) This course introduces students to the field of Human Resource Management (HRM). Course materials and assignments are designed to help students understand why organization 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. prereq: 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. prereq: LSBE candidate or Economics major or college consent; credit will not be granted if already received for FMIS 3141

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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. prereq: 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 directors and officers, negotiable instruments and secured lending transactions. prereq: LSBE candidate or department consent

BLAW 3201. Law for Entrepreneurs. (3 cr.; A-F only; Periodic Fall)
Introduction to legal topics relevant to entrepreneurs, including law of agency, government regulation of employment, property and bailments, forms of business organizations, bankruptcy. prereq: LSBE candidate or college consent

BLAW 4301. Estate Planning Concepts and Strategies. (3 cr.; A-F or Audit; Periodic Spring)
Examines the basics of estate planning, including both the legal and tax aspects of developing an estate and/or incapacity plan. Topics include: probate and probate substitutes, wills and other estate planning documents, gifting and insurance strategies, use of trusts, and federal estate, gift and generation-skipping taxation. prereq: Acct 3401, LSBE candidate or college consent; credit will not be granted if already received for 3301; no grad credit

BLAW 5301. Estate Planning Concepts and Strategies. (3 cr.; A-F or Audit; Periodic Spring)
Examines the basics of estate planning, including both the legal and tax aspects of developing an estate and/or incapacity plan. Topics include: probate and probate substitutes, wills and other estate planning documents, gifting and insurance strategies, use of trusts, and federal estate, gift and generation-skipping taxation. pre-req: MBA student or department consent

Chemical Engineering (CHE)

CHE 1011. 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 principles (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 & Spring)
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 & Spring)
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. pre-req: 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.

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, instructor 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, CHE 2111, 3031, 3112

CHE 3231. Properties of Engineering Materials. (3 cr.; A-F or Audit; Every Spring)
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: BSCH 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 registration. prereq: BSChE cand, department consent

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: BSCH 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: BSCH candidate, 3211, 4111, 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: BSCH candidate, 2121, 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, 2121, 3031, 3112, pre or co-req CHE 4301, PHYS 2012 or 2015 and 2016; 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, 2121, 3031, 3112, (prereq or coreq 4301), Phys 2012 or 2015 and 2016; 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, 3031, 3112, (pre or co-req 4111, 4301); 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, 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 5101. Mining Policy. (3 cr.; A-F or Audit; Fall Odd Year) Socioeconomic, cultural, and legal frameworks that affect mineral resources management specific to the mining industry: Historical and contemporary trends in mining policy and practice, resulting public and private governance in the United States with federal, state and local institutional structures for minerals resource management. pre-req: CHE 4141 or 4142 or graduate 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. prereq: [(Che 2121 or ME 3211), (Che 3231 or ME 2105)] or Chem 4641 or instructor consent
CHE 5193. Process Optimization: Lean Six Sigma. (3 cr.: A-F or Audit; Every Fall) Emphasis on applying Lean and Six Sigma process design and improvement techniques, data driven decision making, cultural transformation and effective change communication. prereq: Instructor consent required
CHE 5250. Advanced Process Control. (3 cr.; A-F or Audit; Every Spring) Investigation into the theory and practical application of the concept of process control dynamics, feedback, and stability. Emphasis will be on dynamic behavior, physical and empirical modeling, computer simulation, measurement, and control technology, basic control concepts, and advanced control strategies. prereq: 4402 or instructor consent
CHE 5321. Theory and Practice of Scanning Electron Microscopy & X-ray Microanalysis. (3 cr.; A-F or Audit; Every Fall) Students will be introduced to the basic physics of scanning electron microscopy, including electron beam generation, beam-sample interactions, signal detection and image formation. Students will also learn how characteristic x-rays are produced in a sample and how they are measured and quantified. In the laboratory sessions students will practice basic sample preparation methods and various techniques of scanning electron microscope to produce quality images and data. prereq: maximum 75 credits, CHEM 1155/56, or CHEM 1175/76, PHYS 2012 or 2015/2016 OR Graduate student; instructor consent
CHE 5555. Project Credits: MEng - Chemical Engineering. (3-6 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, oil 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: BSChem 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 Quality. (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 EESc 2210; or instructor consent
CHE 5701. Biochemical Engineering II. (3 cr.; A-F or Audit; Every Spring) Continuation of CHEM 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 CHEM 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

Chemistry (CHEM)

CHEM 1103. Aspects of Chemistry. (NAT SCI; SUSTAIN; 3 cr.; A-F or Audit; Every Fall & Spring) Topics in general, organic, and biological chemistry using sustainability as the underlying theme. Study of chemical principles, their application, and their impact on daily life. Independent unit in contrast to CHEM 1113, 1151, 1153 or 1161. CHEM 1103 alone satisfies the requirements in liberal education categories Natural Sciences and Sustainability. Alternatively, the combination of CHEM 1103 and CHEM 1104 meets liberal education category requirements for Natural Sciences with lab. prereq: Credit will not be granted if already received for 1102, 1113, 1151, 1153, 1161 or 1173.
CHEM 1104. Aspects of Chemistry Lab. (NAT SCI; 1 cr.; A-F or Audit; Every Fall & Spring) Laboratory in general, organic, and biological chemistry. This laboratory optionally accompanies lecture CHEM 1103. The combination of CHEM 1103 and CHEM 1104
meets liberal education category requirements for Natural Science with lab. prerequisite: Must be taken either after or concurrently with CHEM 1103; credit will not be granted if already received for 1102 (4-credit option), 1113, 1151, 1154, 1161 or 1174.

CHEM 1105. From the Industrial Revolution to Green Chemistry. (SUSTAIN; 3 cr.; Student Option; Spring Even Year) The study of the chemistry associated with scientific and technological discoveries made during the Industrial Revolution in England from 1750-1850. Twenty-first Century “green chemistry” solutions to reduce detrimental impacts of industrialization such as those that occurred during the Industrial Revolution. The study of the lives of selected chemists and natural scientists whose work was located in the Midlands of England.

CHEM 1113. Introduction to General, Organic, and Biological Chemistry I. (NAT SCI; 5 cr.; A-F or Audit; Every Fall) Chemical principles and their applications: atomic and molecular structure, solutions, acids, bases, salts, equilibria. prerequisite: ACT of 21 or higher or MATH 1005; for students terminating study of chem with no more than 10 cr; credit will not be granted if already received for 1151, 1153/1154, 1161, 1173/74 or 2172

CHEM 1114. Introduction to General, Organic, and Biological Chemistry II. (5 cr.; A-F or Audit; Spring Odd Year) Chemical principles and their applications: physical and chemical properties of organic compounds, organic chemistry of living systems; carbohydrates, lipids, proteins, enzymes, nucleic acids, and metabolic pathways. prerequisite: 1113

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 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 algebra and General Chemistry I is required. The companion laboratory course CHEM 1156 should be taken concurrently. prerequisite: 1151 or 1153 or 1161 or 1173; credit will not be granted if already received for 1152, 1162 or 1175.

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 algebra and General Chemistry I is required. The companion laboratory course CHEM 1156 should be taken concurrently. prerequisite: 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 titration, intermolecular forces, colligative properties, kinetics, chemical equilibria, and qualitative analysis. This laboratory accompanies lecture CHEM 1155. prerequisite: 1151 or 1161 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, thermochemistry, intermolecular forces, gases, liquid and solutions, and other selected topics. Fundamental of applied concept 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. prerequisite: previous or concurrent enrollment in CHEM 1153 or 1154 or 1174; concurrent or previous enrollment in CHEM 1152, 1162 or 1176.

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. prerequisite: CHEM 1173 or CHEM 1153 and BS-Chemistry major or BS-Biochemical major or BA-Chemistry major of BA-Biochemistry major or by 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. Covere 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. prerequisite: 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. prerequisite: 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 sediments, and environmental 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. prerequisite: 1152 or 1162 or 1155 and 1156 or 1175 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
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 a commercial, 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) Identification and analysis of biological molecules with emphasis on the macro-molecules, polysaccharides, proteins, and nucleic acids (RNA, DNA). prereq: 2522 or 2532 or 2542; previous or concurrent registration in 3322

CHEM 3432. Descriptive Inorganic Chemistry. (3 cr. ; A-F or Audit; Every Spring) The course will survey the chemistry of the elements, including periodic trends. Acid base chemistry, electrochemistry, structures of solids, and bioinorganic chemistry will be discussed. prereq: (2222 or 2242) and 2542

CHEM 4184. Undergraduate Seminar I. (1 cr. ; S-N or Audit; Every Fall) First course of a two-course senior seminar requirement for B.S. Chemistry and B.S. Biochemistry majors. Students will learn to prepare and present scientific talks. Use of visual aids and computer technology, presentation organization and delivery, and use of scientific literature will be among the skills students will learn. In addition, students will attend and evaluate weekly departmental seminars. prereq: BS Chem or BS Biochem Major

CHEM 4185. Undergraduate Seminar II. (; 1 cr. ; A-F only; Every Spring) Second course of a two-course senior seminar requirement for B.S. Chemistry and B.S. Biochemistry majors. Students will learn to prepare and present scientific talks. Use of visual aids and computer technology, presentation organization and delivery, and use of scientific literature will be among the skills students will learn. In addition, students will attend and evaluate weekly departmental seminars. Students will participate in and present at the annual Departmental Undergraduate Symposium. prereq: 4184
CHEM 4374. Physical Biochemistry Laboratory. (2 cr.; A-F or Audit; Every Spring)
This capstone course will provide students with the opportunity to apply and address research problems in the field of biochemistry via a team-based "open-ended", investigative approach. They will be challenged to utilize and build upon their fundamental knowledge and experience, garnered from previous coursework, to design and carry out experiments focused on understanding the physical chemical basis of biochemical phenomena. prereq: 4373, 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. Mechanism of inorganic reactions. Group theory and spectroscopy applied to inorganic systems. prereq: Chem 2222 or 2242 and 2542

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: 2 yrs of college-level chemistry, (2222 or 2212 or 2242), Math 1297, Phys 2012 or (2015 and 2016) or Phys 1001, BS-BMB major or BA-Chem major, 4634 may be taken concurrent

CHEM 4634. Physical Chemistry. (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-Biochemistry 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 4331 and 4642 or 4634 or instructor consent

CHEM 5150. Organic and Stable Isotope Biogeochemistry. (3 cr.; A-F or Audit; Periodic Spring)
Production and chemical composition of natural organic matter (OM), diagenesis and catagenesis of OM; stable isotopic fractionation processes of C, H, O, N, and S in natural systems, fractionation theory, isotopic indicators of climate, oceanographic/limnologic processes, trophic structure, microbial processes. prereq: BIOL 1012 and (CHEM 1152 or 1155 and 1156 or 1162 or 1175 and 1176) and (CHEM 2222 or 2212 or 2242) OR instructor consent

CHEM 5350. Research Topics for High School Chemistry Teachers. (.2-4 cr. [max 8 cr.]; Student Option; Every Fall, Spring & Summer)
Experimental work and philosophy associated with a selected research topic. prereq: Ed MA or MEd student, department consent required.

CHEM 5373. 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 statistics 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. In addition to the lecture and exams, students in this graduate course will prepare and present an original research proposal in the format of an NSF Graduate Research Fellowship (GRF) application. prereq: CHEM 4632 or 4634 or and CHEM 4351 or 3322 and instructor consent

CHEM 5424. Advanced Inorganic Chemistry I. (.3 cr.; A-F or Audit; Periodic Spring)
Advanced 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 polymers. 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: Chemistry 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 5524. 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 5560. 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. [max 12 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 9 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

Chinese (CHIN)

CHIN 1101. 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 1102. 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: CHIN 1101 or equivalent or instructor consent

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 or Audit; 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. pre-req: 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; admission to an approved study abroad program requires consent from the International Programs and Services 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. ; A-F only; CHIN 1202 or equivalent with a C or better; Periodic Fall, Spring & Summer) Students develop and carry out reading and research projects in consultation with the instructor. pre-req: 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 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 2025 and PHYS 2011 or 2013 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 geologic 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 computational 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 orthogonal 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 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) 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) 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 3225. Hydraulics and Hydrology. (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 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.; A-F or Audit; Every Fall & Spring) 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. prereq: 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 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 torsion, 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

CE 4137. Advanced Structural Analysis. (; 3 cr.; A-F or Audit; Periodic Fall & Spring) This course covers advanced methods of structural linear and nonlinear analysis. Topics include matrix methods for indeterminate structures, introduction to finite elements, plastic analysis using upper-bound and lower-bound theorems, and time-dependent analysis. prereq: 4126, 4115, BSCE candidate; no grad credit

CE 4213. Open Channel Hydraulics. (3 cr.; A-F or Audit; Periodic Fall & Summer) 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 management. prereq: 3225, no Grad credit

CE 4228. Watershed Engineering. (3 cr.; A-F or Aud; 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 Aud; 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 Aud; 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 Aud; 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 Aud; 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 Aud; Every Spring) This course aims to provide an in-depth knowledge of design principles and methodologies for 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 studies and applied to sample corridors. prereq: 3316, no grad credit

CE 4316. Pavement Analysis and Design. (3 cr.; A-F or Aud; 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 renewable 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 Aud; Periodic Fall) Students will learn to evaluate the existing condition of the pavements, designing and selecting the appropriate rehabilitation strategy. Furthermore, 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, AASHTOWare are Pavement ME Design, DRIP, BCOA-ME and MnPAVE will be utilized, wherever applicable. prereq: 3027, 3316 or instructor consent; no grad credit

CE 4320. Advanced Pavement Materials, Design and Construction. (3 cr.; A-F or Aud; Periodic Fall) This course contains both lecture and lab classes. in the lecture class, students will learn the following: (i) mixture design procedures for concrete and asphalt pavements with and without the application of recycled materials; (ii) mechanistic design of pavement using 'MnPAVE' and 'AASHTOWare are Pavement ME Design' procedures, and (iii) pavement construction procedures. In the laboratory class, students will learn the following: (i) perform the mixture design for asphalt and concrete pavement materials for a real-world pavement project, (ii) conduct performance tests on the samples prepared with their own mixture designs, and (iii) participate field trips to monitor recent trends in the material mixture design and pavement construction procedures.

Students will prepare a project report and present to the class towards the end of the semester. The lab report and project report will a group work. Students will need to interact with the experts from the pavement industry for completing the project report. prereq: CE 3027; no grad credit

CE 4326. Highway Planning and Design. (3 cr.; A-F or Aud; Every Fall) This course aims to provide an in-depth knowledge of 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 4328. Transportation System Planning and Analysis. (3 cr.; A-F or Aud; Periodic Spring) This course introduces theoretical foundations of transportation planning, design, and analysis methods. Main topics include theory and application of aggregate and disaggregate models for route/mode choice, land use, and trip generations. The methodologies for planning, design, and evaluation of transportation system alternatives are also addressed in this course. pre-req: CE 3316

CE 4415. Geotechnical Design. (3 cr.; A-F or Aud; 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 Aud; 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 Aud; 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. 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 BSCHE or BSIE or BSMC or 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 grad 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 precace and 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 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: 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 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, multijobjective 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, groundwater, and soil-sediment systems. Total Maximum Daily Load (TMDL) and remediation design applications. Applications in water and wastewater treatment. prereq: 3025 or CHE 2001 or grad 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 CHE 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 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. Above basics 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, traffic theory, and microscopic modeling. Macroscopic 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 grad student

CE 5320. Advanced Pavement Materials, Design and Construction. (3 cr.; A-F or Audit; Periodic Fall)
This course contains both lecture and lab classes. In the lecture class, students will learn the following: (i) mixture design procedures for concrete and asphalt pavements with and without the application of recycled materials; (ii) mechanistic design of pavement using ‘MNPAVE’ and ‘AASHTOW are Pavement ME Design’ procedures, and (iii) pavement construction procedures. In the laboratory class, students will learn the following: (i) perform the mixture design for asphalt and concrete pavement materials for a real-world pavement project, (ii) conduct performance tests on the samples prepared with their own mixture designs, and (iii) participate field trips to monitor recent trends in the material mixture design and pavement construction procedures. Students will prepare a project report and present to the class towards the end of the semester. The lab report and project report will be a group work. Students will need to interact with the experts from the pavement industry for completing the project report. This course will also be offered as 4320; the student taking this course as CE 5320 will need to do more homework assignments than those who are taking it as CE 4320. pre-req: CE 3027

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 grad 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 project, in addition to the undergraduate 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 Every Year)
The course covers 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 in economics and real estate. 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 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 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)

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)
CC 3117. Functional Anatomy and Sport Injury Management. (3 cr.; A-F or Audit; Every Fall & Spring) Functional anatomy, care and prevention of sport injuries, emergency care and external support application. Principles and techniques appropriate for coaches, recreational personnel, pre-professional physical therapists and nurses. prereq: Coaching minor or instructor consent

CC 3150. Coaching Methods. (3 cr.; A-F or Audit; Every Fall & Summer) Study and application of educational methods in an athletic setting. Skill development, learning styles, communication skills, technology skills and practice development as it pertains to sport. prereq: Coaching minor or instructor consent

CC 3160. Psychological Aspects of Coaching and Athletic Performance. (; 3 cr.; A-F or Audit; Every Fall & Spring) Psychological techniques and interventions to enhance athletic performance. Emphasizes the implementation of mental skills that enhance athletic performance into sport practice by the coach and/or athlete. prereq: Coaching minor or instructor consent

CC 3161. Administrative Aspects of Coaching. (; 3 cr.; A-F or Audit; Every Fall & Spring) Examines state governing organizations, budgeting, scheduling, insurance, contest administration, and public relations procedures in athletic programs. prereq: Coaching minor or instructor consent

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

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

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

CC 3174. Coaching and Officiating Soccer. (2 cr.; A-F or Audit; Periodic Spring) Fundamental skills, systems of offense and defense, strategy and rules of the game, methods of organizing practices. prereq: Coaching minor or instructor consent

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

CC 3179. 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

CC 3991. Independent Study. (1-4 cr.; A-F or Audit; Every Fall & Spring) A coaching methods experience. Directed individual study must be arranged with the instructor before registration. prereq: Coaching minor and instructor consent

CC 3997. Coaching Practicum. (2 cr.; S-N only; Every Fall, Spring & Summer) Supervised coaching in a school or agency setting. Coaching practicum must be arranged with the instructor before registration. prereq: completed all required Coaching minor courses or in progress and instructor consent

COG 3915. Special Topics in Cognitive Science (Various Titles to be Assigned). (3 cr.; A-F or Audit; Periodic Spring) Selected topics that fall outside currently offered courses. Topic announced before course offered. pre-req: PHIL 1025

COG 4900. Cognitive Science Seminar. (4 cr.; A-F or Audit; Every Spring) A detailed examination of a topic from Cognitive Science that will be explored using the theories, resources, and methods of multiple disciplines from within Cognitive Science. Examples of possible topics include: language, perception, consciousness, artificial intelligence, and reasoning. pre-req: PHIL 1025

CLA 1199. Applied Leadership Practicum. (1-3 cr.; S-N only; Every Summer) Course for student leaders working with the UMD welcome week program. For more information, please contact Emily Borra at ekborra@d.umn.edu. prereq: instructor consent

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.

COMM 1222. Interpersonal Communication. (COMM & LAN; 3 cr.; A-F or Audit; Every Fall & Spring) Analysis of the role communication plays in interpersonal relationships.

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 1151

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.

COMM 3200. Interpersonal Communication Theory. (3 cr.; A-F or Audit; Every Fall & Spring) 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 society; introduces students to 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.

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

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, 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. (3 cr.; A-F or Audit; Periodic 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. (CDIVERSITY; 4 cr.; Student Option; 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 3500. 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 televisual 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 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 participants/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 3575. Jews & Poles: Entangled Lives, Cultures and Memories in the 20th Century Poland - Study Abroad. (GLOBAL PER; 4 cr.; A-F only; Periodic Summer) Study abroad in Poland. This course focuses on the history, experience and memory of Jewish life in Poland. One of the focuses of the course will be the experience of discrimination and the history of the Holocaust in Poland. However, the course will also examine the ways in which both Poles and Jews contributed to and engaged in a rich cultural, social and economic life in communities across the region and, in some cases, continued to do so today. The course will consider the history and legacies of the co-existence, interdependence, entanglement between Poles, Jews, and other minority populations in this diverse geographic space. We will also explore the contentious contemporary debates over the politics of commemoration of Holocaust sites and Jewish life in Poland today. Pre-req: minimum 30 credits, instructor consent; admission to an approved study abroad program requires consent from the International Programs and Services Office.

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. Prereq: 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. Prereq: 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. Prereq: 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 class 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. Prereq: 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 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 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; admission to an approved study abroad program requires consent from the International Programs and Services 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. Prereq: 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. Prereq: 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. Prereq: instructor consent; no grad credit.

COMM 4500. History of Rhetoric. (3 cr.; A-F or Audit; Periodic Fall & Spring) Rhetoric has a long and storied history. This course surveys that rich history from ancient...
to contemporary times. The course aims at developing understanding of key figures, events, and concepts in rhetoric's history to reflect on the role that all kinds of symbolic action play in the lives of societies, polities, and individuals. Together we will examine enduring philosophical issues in the study of public argument. Students will gain practical tools for understanding public communication and the analysis of rhetorical texts.

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.

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. prereq: 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. pre-req: instructor consent
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 expanded development of standing 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.; max 18 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.; Student Option; Periodic Fall, Spring & Summer)
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 Summer)
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. (1-3 cr.; A-F only; 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 age groups 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; Periodic Spring & Summer)
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

Computer Science (CS)

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 no prior programming experience, prereq: 1 yr high school algebra or instructor consent experience, prereq: 1 yr high school algebra or instructor consent

CS 1141. Introduction to Programming in C#. (3 cr.; A-F or Audit; Every Spring)
Introduction to programming in the C# (read as C sharp) programming language. C# is a simple, object-oriented programming language based on C++. This course will cover data representation, operators, expressions, control structures, arrays and programming with C#. Requires implementation of significant programming projects. prereq: 1 yr high school algebra or instructor consent prereq: 1 year high school algebra or instructor consent

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 techniques to increase software quality. 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 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 techniques. Algorithm analysis, 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 measuring techniques. 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 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 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 3531. Automata and Formal Languages. (4 cr.; A-F or Audit; Every Fall & Spring) Introduction to the theory of computation. Deterministic and nondeterministic finite automata, regular languages and regular expressions. Kleene's Theorem. Context-free languages, context-free grammars and pushdown automata. Turing 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 3541. 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 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 4112. Advanced Theory of Computation. (4 cr.; A-F or Audit; Periodic Fall & Spring) Mathematical theory of computation and complexity. Deterministic and nondeterministic Turing machines, Church-Turing Thesis, recursive and recursively enumerable languages. Lambda calculus. Undecidable problems, Rice’s Theorem, undecidability of first-order logic and G?del?:s incompleteness theorem. Time and space complexity, reducibility, completeness for complexity classes, Cook’s Theorem, P versus NP, Savitch’s Theorem, complexity hierarchy. prereq: no grad cr, 3512 or 3531 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 4112. Advanced Theory of Computation. (4 cr.; A-F or Audit; Periodic Fall & Spring) Mathematical theory of computation and complexity. Deterministic and nondeterministic Turing machines, Church-Turing Thesis, recursive and recursively enumerable languages. Lambda calculus. Undecidable problems, Rice’s Theorem, undecidability of first-order logic and G?del?:s incompleteness theorem. Time and space complexity, reducibility, completeness for complexity classes, Cook’s Theorem, P versus NP, Savitch’s Theorem, complexity hierarchy. prereq: no grad cr, 3512 or 3531 or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 4122. Artificial Intelligence. (4 cr.; A-F or Audit; Every Fall & Spring) Principles and programming methods of artificial intelligence. Knowledge representation methods, state space search strategies, and use of logic for problem solving. Applications chosen from among expert systems, planning, natural language understanding, uncertainty reasoning, machine learning, and robotics. Lectures and labs will utilize suitable high-level languages (e.g., Python or Lisp). prereq: no grad credit, 2511, (2531 or 3512 or MATH 3355), (MATH 3280 or 3326) or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 4222. Artificial Intelligence. (4 cr.; A-F or Audit; Every Fall & Spring) Principles and programming methods of artificial intelligence. Knowledge representation methods, state space search strategies, and use of logic for problem solving. Applications chosen from among expert systems, planning, natural language understanding, uncertainty reasoning, machine learning, and robotics. Lectures and labs will utilize suitable high-level languages (e.g., Python or Lisp). prereq: no grad credit, 2511, (2531 or 3512 or MATH 3355) or instructor consent, a grade of C- or better is required in all prerequisite courses

CS 4232. Machine Learning & Data Mining. (4 cr.; A-F or Audit; Every 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. This is a potential Master's project course. prerequisite: no grad credit, 2511, 2531 or 3512 or MATH 3355, Stat 3611 or 3411, Math 3280 or 3326 or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4242. Natural Language Processing. (4 cr.; A-F or Audit; Periodic Fall)
Techniques for creating computer programs that analyze, generate, and understand written human language. Emphasizes broad coverage of both rule-based and empirical data-driven methods. Topics include word-level approaches, syntactic analysis, and semantic interpretation. Applications selected from conversational agents, sentiment analysis, information extraction, and question answering. prerequisite: CS 2511, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in the prerequisite course; credit will not be granted if already received for CS 4-5242 or 5761

CS 4312. Operating Systems. (4 cr.; A-F or Audit; Every Fall & Spring)
Operating system as resource manager. Modern solutions to issues such as processor management and scheduling, concurrency and related problems including deadlocks, memory management and protection, file system design, virtualization, distributed and cloud computing. Concepts including concurrency are illustrated via laboratory assignments. prerequisite: no grad credit, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4322. Database Management Systems. (4 cr.; A-F or Audit; Every 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. prerequisite: CS 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4332. Computer Security. (4 cr.; A-F or Audit; Every Fall & Spring)
Entropy and the underlying characteristics of text. Encryption-based techniques based on confusion and diffusion and modern day encryption. Access, information flow and inference control. Program threats and intrusion detection/prevention, Network and Internet security. Firewalls, trusted systems, network authentication. Privacy and related social issues. Planning, Incidents, and Recovery. prerequisite: no grad credit, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4342. 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. prerequisite: no grad credit, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4412. Computer Architecture. (4 cr.; A-F or Audit; Periodic Spring)
Broad coverage of computer architecture, with a focus on the development of the stored program computer and the historical evolution of architectures. Includes coverage of significant architectures based on vacuum tubes, transistors, and integrated circuits. Impact of Moore's Law and possible paradigms for the future including quantum and molecular computing. prerequisite: no grad credit, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 4422. Computer Networks. (4 cr.; A-F or Audit; Every Fall & Spring)
Introduction to computer networking, network programming, networking hardware and associated network protocols. Layered network architecture, network services, and implementation of computer networking software. prerequisite: no grad credit; CS 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; 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 nondeterministic time and space complexity, complexity classes, NP-completeness, Cook's Theorem, P vs NP.

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. prerequisite: instructor consent

CS 4994. Honors Project. (2-3 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. prerequisite: 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].

CS 5112. Advanced Theory of Computation. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Mathematical theory of computation and complexity. Deterministic and nondeterministic Turing machines, Church-Turing Thesis, recursive and recursively enumerable languages. Lambda calculus. Undecidable problems, Rice's Theorem, undeciability of first-order logic and G?del's incompleteness theorem. Time and space complexity, reducibility, completeness for complexity classes, Cook's Theorem, P versus NP, Savitch's Theorem, complexity hierarchy, prerequisite: grad student, CS 3512 or 3531 or instructor consent

CS 5122. Advanced Algorithms and Data Structures. (4 cr.; A-F or Audit; Every Fall & Spring)
Survey of advanced data structures and algorithms such as heaps and heapsort, quicksort, red-black trees, B-trees, hash tables, graph algorithms, divide and conquer algorithms, dynamic programming, and greedy algorithms. Methods for proving correctness and asymptotic analysis. prerequisite: grad student; CS 2511, 2531 or 3512 or MATH 3355 or instructor consent; a grade of C- or better in all prerequisite courses

CS 5212. Computer Graphics. (4 cr.; A-F or Audit; Every Fall & Spring)
Introduces the fundamentals of computer graphics to create 2D images from 3D data representations, the graphics pipeline, 3D representations of objects such as triangles and triangle meshes, surface material representations, color representation, vector and matrix mathematics, 3D coordinates and transformations, transport of light energy, global illumination, graphics rendering systems, ray tracing, rasterization, real-time rendering. OpenGL and computer graphics hardware. prerequisite: graduate student, CS 2511, (2531 or 3512 or MATH 3355), (MATH 3280 or 3326) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 5222. Artificial Intelligence. (4 cr.; A-F or Audit; Every Fall & Spring)
Principles and programming methods of artificial intelligence. Knowledge representation methods, state space search strategies, and use of logic for problem solving. Applications chosen from among expert systems, planning, natural language understanding, uncertainty reasoning, machine learning, and robotics. Lectures and labs will utilize suitable high-level languages (e.g., Python or Lisp). prerequisite: grad student, 2511, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 5232. Introduction to Machine Learning and Data Mining. (4 cr.; A-F or Audit; Every 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. This is a potential Master's project course. prerequisite: grad student, 2511, 2531 or 3512 or MATH 3355, Stat 3611 or 3411, Math 3280 or 3326 or instructor consent; a grade of C- or better is required in all prerequisite courses

CS 5242. Natural Language Processing. (4 cr.; A-F or Audit; Periodic Fall)
Techniques for creating computer programs that analyze, generate, and understand written human language. Emphasizes broad coverage of both rule-based and empirical data-driven methods. Topics include word-level approaches, syntactic analysis, and semantic interpretation. Applications selected from conversational agents, sentiment analysis, information extraction, and question answering. Significant research project that includes experimental results, written report, and clear grasp of ethical considerations involved.  
prereq: CS 2511, 2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in the prerequisite course, credit will not be granted if already received for CS 4242 or 5761  

CS 5312. Operating Systems. (4 cr.; A-F or Audit; Every Fall & Spring)  
Operating system as resource manager. Modern solutions to issues such as processor management and scheduling, concurrency and related problems including deadlocks, memory management and protection, file system design, virtualization, distributed and cloud computing. Concepts including concurrency are illustrated via laboratory assignments, This is a potential Master's project course. prereq: grad student, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses  

CS 5322. Database Management Systems. (4 cr.; A-F or Audit; Every 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/prevention. Network and Internet security. Firewalls, trusted systems, network authentication. Privacy and related social issues. Planning, Incidents, and Recovery. prereq: grad student, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses  

CS 5332. Compiler Security. (4 cr.; A-F or Audit; Every 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/prevention. Network and Internet security. Firewalls, trusted systems, network authentication. Privacy and related social issues. Planning, Incidents, and Recovery. prereq: grad student, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses  

CS 5342. 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: grad student, 2511, 2521, 2531 or 3512 or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5412. Computer Architecture. (4 cr.; A-F or Audit; Periodic Spring)  
Broad coverage of computer architecture, with a focus on the development of the stored program computer and the historical evolution of architectures. Includes coverage of significant architectures based on vacuum tubes, transistors, and integrated circuits. Impact of Moore's Law and possible paradigms for the future including quantum and molecular computing. prereq: 2521, (2531 or 3512 or MATH 3355) or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5422. Computer Networks. (4 cr.; A-F or Audit; Every Fall & Spring)  
Introduction to computer networking, network programming, networking hardware and associated network protocols. Layered network architecture, network services, and implementation of computer networking software. prereq: grad student, 2511, 2521, (2531 or 3512 or MATH 3355) or instructor consent; a grade of C- or better is required in all prerequisite courses  

CS 5511. User Interface Design. (4 cr.; A-F or Audit; Periodic Fall)  
Design and implementation; interactive programs using components, containers, events, menus, and dialogs. The use of graphics primitives, color and images; giving user feedback and help. Rapid prototyping and interface management systems. Design for accessibility and usability. prereq: 2511, (2531 or 3512 or MATH 3355) (MATH 3326 or 4326) or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5551. User Interface Design. (4 cr.; A-F or Audit; Periodic Fall)  
Design and implementation. Interactive programs using components, containers, events, menus, and dialogs. The use of graphics primitives, color and images; giving user feedback and help. Rapid prototyping and interface management systems. Design for accessibility and usability. prereq: 2511, (2531 or 3512 or MATH 3355) (MATH 3326 or 4326) or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5571. Principles of Programming Language. (4 cr.; A-F or Audit; Periodic Fall & Spring)  
Introduction to the fundamental concepts in programming languages. Introduction to the intellectual tools needed to use, evaluate, design and choose programming languages, and reason about programs. Lambda calculus, different programming paradigms such as functional programming and logic programming. Programming in a functional language such as ML and OCAML, and in a logic language, e.g., Prolog. Using these languages as case studies to examine each basic concept of programming languages (values, bindings, types, abstraction etc.). Syntax analysis (syntax, parsing, interpreting, and compiling). Includes a project, e.g., implementing a working interpreter for a small language. prereq: 2511, (2531 or 3512 or MATH 3355) or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5612. 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: grad student, CS 5212 or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5642. Advanced Natural Language Processing. (4 cr.; A-F or Audit; Periodic Fall & Spring)  
Advanced techniques for creating computer programs that analyze, generate, and understand written human language. Emphasizes current empirical data-driven methods. Topics include sentence level representations, vector semantics, and models of document understanding. Applications selected from word sense discovery, machine translation, sentiment and option mining, and social computing. Significant research project that includes experimental results, written report, and clear grasp of ethical considerations involved. preq: CS 4242 or 5242 or instructor consent; a grade of C- or better is required in the prerequisite course.  

CS 5652. Human Computer Interaction. (4 cr.; A-F only; Every Fall)  
Introduction and exploration of software algorithms, hardware components, and concepts for building and evaluating augmented and virtual reality environments. Focus will be on 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: graduate student, CS 5212 or instructor consent, a grade of C- or better is required in all prerequisite courses  

CS 5732. 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 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 5995. Special Topics: (Various Titles to be Assigned). (; 1-4 cr.; A-F or Audit; Periodic Fall & Spring)
Study of selected topic announced in Class Schedule.

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 the criminal justice system in United States. Nature and extent of crime; social factors related to criminal behavior.

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

(; 3 cr.; A-F or Audit; Periodic Fall, Spring & Summer)
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

(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 practice. 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 that can reduce or prevent crime. prereq: 30 credits or instructor consent

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)
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 3375. Restorative Justice.
(3 cr.; A-F or Audit; Periodic Fall & Spring)
This 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 crime victims and as criminal 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:
Cultural Entrepreneurship (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 4391. Independent Study in Criminology. (1-6 cr.; A-F or Audit; 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

CUE 4399. Honors Project Criminology. (3 cr.; 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 6 credits allowed between SOC 4991 and CRIM 4391, no grad credit

CUE 4390. Teaching Assistantship in Criminology. (1-3 cr.; A-F or Audit; Every Fall & Spring) Practical experience in teacher-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

CUE 4392. Victimology. (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: CRIM 1301 or SOC 1101, 60 credits; no grad credit

CUE 4394. 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

CUE 4391. 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 earned or in-progress credits or instructor consent

CUE 4392. 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 capability to think and act entrepreneurially in order to advance the development of their cultural enterprises. prereq: CUE 3001 or MGTS 4422 or instructor consent

CUE 3001. 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 80 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 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-reg: 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 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: graduate student

**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 1011. 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 & Spring)
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 1111 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 3231. 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 3241. 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; undergrads may not take more than 6 credits in 3991 and 5991 combined

DN 3995. Special Topics (Various Titles to be Assigned). (1-9 cr. ; A-F or 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

ECH 3015. 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 3025. 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) 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 UECCh program

ECH 3060. Teaching Culturally and Linguistically Diverse Children. (3 cr.; A-F or Audit; Every Spring) 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 UECCh 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 UECCh 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, 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 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 UECCh program or Early Childhood Studies

ECH 3104. 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 UECCh program

ECH 3950. Guided Observations in Diverse Settings: Birth-Age Eight. (1-6 cr.; Student Option; Every Fall, Spring & Summer) This is a field-based capstone supervised experience for students pursuing the Early Childhood Studies (ECS) Bachelor of Applied Arts degree. The purpose of this internship experience is to provide students with an opportunity to observe and apply knowledge and skills gained in the classroom, to the actual workplace. With faculty guidance, students will be placed in one of several possible early childhood settings. A suitable placement will be determined based on an individual student's interest, and will be also aligned with their minor and elective courses taken. The internship will be supervised by a faculty, in collaboration with an identified mentor working in the respective placement. The student's internship engagement will range from reflective observations to actual work that...
demonstrates strong theoretical application of knowledge and skills gained through course work. As a capstone experience, the internship aims to give the student an edge in launching into the workforce. pre-req: Capstone experience undertaken upon coursework completion and department consent

ECON 4009. Leadership in Early Childhood Studies. (3 cr.; A-F or Audit; Every Spring) Develops knowledge and competencies in the area of leadership, including development and administration of early childhood programs, professionalism, ethics and social policy. pre-req: Admission to UECH program; no grad credit

ECON 4100. 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. pre-req: Admitted to UECH program; no grad credit

ECON 4400. Professional Development Seminar. (1 cr. [max 3 cr.]; A-F or Audit; Every Spring) Developmental readiness and knowledge related to working with children from birth through age eight. pre-req: Admitted to UECH program or post bac per instructor consent; no grad credit

ECON 4610. Professional Issues Seminar in Early Childhood Education. (1 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. pre-req: admitted to UECH program; no grad credit

ECON 4901. Independent Study. (1-6 cr.; A-F or Audit; Every Fall & Spring) Individualized research and research in a special topic. pre-req: instructor consent; no grad credit

Economics (ECON)

ECON 1003. Economics and Society. (SOC SCI; 3 cr.; A-F or Audit; Periodic 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. pre-req: 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) 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. pre-req: Minimum 15 credits or department consent

ECON 1023. Principles of Economics: Micro. (SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring) 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. pre-req: Minimum 15 credits or department consent

ECON 2030. Applied Statistics for Business and Economics I. (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. pre-req: 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; Periodic Fall & Spring) A second introductory statistics course including more advanced topics. Topics include hypothesis testing, analysis of variance, and introduction to correlation and regression. pre-req: 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 & Spring) Determinants of national income, employment, and price levels with particular attention to aggregate demand and aggregate supply, and monetary and fiscal policy. pre-req: 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 Fall & Spring) Behavior of households as consuming units and suppliers of resources; analysis of decision making by firms under various market conditions. pre-req: 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 & Spring) 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. pre-req: 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. Money and Banking. (3 cr.; A-F or Audit; Periodic 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. pre-req: 1022, Econ major or minor or LSBE candidate

ECON 3031. Sports Economics. (3 cr.; A-F or Audit; Periodic Fall & Spring) 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. pre-req: 1022, 1023, Econ major or minor or LSBE candidate

ECON 3402. Global Economic Issues. (3 cr.; A-F or Audit; Periodic Fall & 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 pre-req: LSBE candidate or Econ major or Econ minor

ECON 3595. Special Topics: (Various Titles to be Assigned). (1-3 cr.; A-F or Audit; Periodic Spring) Topics announced in Class Schedule.

ECON 3721. Natural Resource and Energy Economics. (3 cr.; A-F or Audit; Periodic Spring & Summer) 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. pre-req: 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; Periodic Fall, Spring & Summer)
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 3021. Labor Economics: Theory and Issues. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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: 1022

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 (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; no grad credit

ECON 4410. International Economics. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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. Economic and Business Forecasting. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) The course seeks to provide students with the statistical and computational tools required to conduct economic forecasting applied to economic and business decision-making. Topics include time series analysis, Box-Jenkins and ARIMA processes, Exponential Smoothing, Estimation and Forecasting, Forecasts will be applied to economic and business examples, including sales, financial decisions and policy. Econometric software will be taught. Prereq: 3022 and (ECON 3030 or STAT 5511)

ECON 4613. Oligopoly and Monopoly. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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; Periodic Fall, Spring & Summer) 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. Economic and Business Forecasting. (3 cr.; A-F or Audit; Fall Odd Year) The course seeks to provide students with the statistical and computational tools required to conduct economic forecasting applied to economic and business decision-making. 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 to economic and business examples, including sales, financial decisions and policy. Econometric software will be taught. pre-req: MBA student or department consent

ECON 5613. Oligopoly and Monopoly. (3 cr.; A-F or Audit; Periodic Fall, Spring & Summer) 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)

**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). For students whom English is not the first language, prerequisite: This course was previously listed as LANG 1302; maximum of 6 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. prerequisite: 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. prerequisite: 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, prerequisite: 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 Classroom.**
(3 cr.; A-F or Audit; Every Fall & Summer)
English for advanced listening/speaking in the college classroom, for international, non-native speakers of English: lecture comprehension; language and strategies for negotiating group work, leading discussions, giving presentations, and other forms of class participation. Course includes orientation to U.S. classroom, campus life and student services. prerequisite: This course was previously listed as LANG 2303; instructor consent; maximum of 5 credits between EDUC 2303 and LANG 2303

**EDUC 2304. Editing for Writers.**
(2 cr. [max 4 cr.]; A-F or Audit; Every Fall & Spring)
This language course focuses on editing for grammatical accuracy and academic style. Students will examine features of formal academic writing, study grammar, take useful grammar notes, practice with a variety of sentence structures, and develop strategies for editing and proofreading. Can be taken concurrently with WRIT 1120. For students for whom English is not the first language, prerequisite: This course was previously listed as LANG 2304; maximum of 4 credits between EDUC 2304 and LANG 2304

**EDUC 3100. Bilingualism & Biliteracy Development: Foundations of Second Language Acquisition.**
(3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Students in this course learn about cognitive and social benefits of bilingualism and multilingualism while considering how second language acquisition research informs language teaching. They learn about the major theories in the field of second language acquisition, including newer interdisciplinary approaches. Students explore the internal and external factors affecting second language acquisition in naturalistic and instructional settings, such as motivation and length of instruction. They also learn about biliteracy development, the transfer of skills across languages, and academic language acquisition. By the end of this course, students are able to explain the processes of second language acquisition and the outcomes of such processes in social and academic contexts.
pre-req: LING 1811

**EDUC 3202. African Story-Telling and Folklore.**
(3 cr.; A-F or Audit; Every Fall & Summer)
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.

**EDUC 3211. Teaching English as a Foreign Language Theory and Methods.**
(3 cr.; A-F or Audit; Every Fall, Spring & Summer)
This course is intended for students interested in teaching internationally and offers a practical introduction to English language teaching to non-native speakers of English in a non-native language environment by linking practice to current theory and research. In addition to reviewing how to create lesson plans based on principles and knowledge of learning outcomes, meaningful teaching techniques, models of teaching, motivation, and classroom management, this class provides a solid pedagogical foundation for teaching listening, speaking, reading, writing, pronunciation, vocabulary, and grammar. Students review the classification of language instruction practices and the major international language tests, discuss cross-cultural communication, and address the impact of cultural variables on English language learning in an international setting. The course includes a module on using technology in a variety of educational contexts. This course and program do not lead to a Minnesota teaching license. pre-req: EDUC 3100

**EDUC 3311. English Language Learner Teaching Methods.**
(3 cr.; A-F or Audit; Every Fall, Spring & Summer)
The course prepares students for teaching and accommodating culturally and linguistically different learners by reviewing the foundations of immersion education and content-based language instruction. Students learn to adapt materials and activities, as well as evaluate and effectively use existing practices and resources. Students practice making graphic organizers, study guides, and other materials required to teach English language learners (ELL). The course analyzes the principles of backward course design, learners' needs assessment, cooperative learning strategies, and includes comparison of the basic Interpersonal Communication Skills (BICS) vs. Cognitive Academic Language Proficiency (CALP). Students develop the instructional strategy of modeling and enhance their teaching skills through the advanced use of visual resources. The course incorporates highly practical readings and provides students...
with successful real-life classroom strategies for improving the learning achievements of all their learners? with a focus on English language learners. This course and program do not lead to a Minnesota teaching license. pre-req: EDUC 3100

EDUC 3330. Assessment of Language Development. (3 cr.; A-F or Audit; Every Fall, Spring & Summer) This course includes a review of assessment theory and its application in teaching English language learners (ELLs) and multilingual students. This includes an emphasis on performance-based assessment in language education. In addition, the course explores equity issues related to assessment practices in light of bilingualism and cultural backgrounds. Students will analyze how language and cultural differences impact responses to tasks and learn to identify bias present in assessment methods. They will demonstrate how to provide meaningful feedback to ELLs and incorporate test-taking strategies into their lessons. By the end of this course, students will describe best practices of assessment theory and apply this to the creation of authentic assessment plans for language education. They will also demonstrate thinking critically about assessment methods in regards to multilingual learners based on increased knowledge of language proficiency levels and cultural inclusivity. pre-req: EDUC 3100

EDUC 3340. Interacting with Diverse Families. (3 cr.; A-F or Audit; Every Fall) Issues related to a work 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, members with a disability and families headed by lesbian/gay parents. pre-req: Credit will not be granted if credit has been received for EDUC 5340.

EDUC 3381. Teaching American Indian Students in the Elementary Classroom. (3 cr.; A-F only; Every Fall & Spring) Survey of contemporary Indian education; evaluation of one's attitudes toward Indian students; direct interaction with Indian parents and students; development of culturally sensitive teaching plans regarding Indians. pre-req: Admission to IESE program and successful completion of Blocks One and Two courses and associated field experiences; credit will not be granted if already received for ELED 3381

EDUC 3412. 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-based instruction.

EDUC 4040. World Language Teaching Methods. (4 cr.; A-F or Audit; Every 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. pre-req: FR 2301 or GER 2301 or SPAN 2301 or equivalent, admission to EdSE program or instructor consent; grad credit; credit will not be granted if already received for LANG 4044

EDUC 4050. Language Policy and Education. (2 cr.; A-F or Audit; Every Fall, Spring & Summer) The course reviews the connection between language, culture, and identity while focusing on the global state of immersion education in which content is taught in a language other than the majority language. Students will examine issues related to language ideologies and power both in the United States and abroad. They will explore the philosophical goals of immersion education, comparing and contrasting the different models of one-way immersion and two-way immersion (also known as bilingual education). This course includes a historic overview of language policy in the United States. Students will analyze past and present legislation as they discuss the role of education in language planning. By the end of the course, students will be able to match key features of immersion programs, including one-way and two-way programs, to the particular needs of a student or community and will be able to situate models of language education in a sociopolitical context. pre-req: EDUC 3100; no grad credit

EDUC 4081. American Indian Education Policy Development in the 20th Century. (CDIVERSITY; 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, including educational 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. pre-req: Minimum 60 credits, no grad credit; credit will not be granted if already received for EDUC 5081

EDUC 4099. Teaching English to Speakers of Other Languages/Teaching English as a Foreign Language Practicum. (1 cr.; A-F only; Every Fall, Spring & Summer) This practicum is required for students in the Teaching English to Speakers of Other Languages (TESOL) and Multilingual Education minor or Teaching English as a Foreign Language (TEFL) Certificate. The course includes observation of experienced English as a Second Language teachers as well as hands-on experience working with English language learners and emerging bilinguals. In this course, students synthesize theoretical research with reflective observation, thus adding to their understanding of evidence-based teaching. In practice placements, students will be exposed to a variety of age groups and proficiency levels in order to broaden their understanding of the field of TESOL and TEFL within public schools and immersion programs. Students with proficiency in another language may also have the option to be placed in immersion schools. Students complete 40 hours of combined observation and direct work with English language learners and emerging bilinguals. At the end of this practicum, students have a deeper understanding of the connection between theory and practice. pre-req: EDUC 3211 or 3311 (or concurrent registration) and instructor consent

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 lect) pre-req: 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 or 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. pre-req: 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. pre-req: 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. pre-req: Math 1140 or 1296

EDUC 4234. Science, Technology, and Society. (SUSTAIN; 3 cr.; A-F or Audit; Every Fall, Spring & Summer) Nontechnical study of historical and cultural impact of natural science and technology on
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

EDUC 4347. Second Language Acquisition & ELL: How Second Languages are Learned & Methods for Teaching. (2 cr.; A-F or 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. prereq: Admission to IESE 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 4347.

EDUC 4381. Teaching Indigenous Students. (3 cr.; A-F or Audit; Every Fall & Spring) Survey of contemporary and historical Indian education; evaluation of attitudes toward Indian students: direct interaction with Indian parents and students; development of culturally sensitive teaching plans; specific cultural characteristics of indigenous groups; examination of American Indian outcomes. prereq: EDSE 4100; no grad credit; credit will not be granted if already received for EDUC 5381.

EDUC 4800. Professional Issues and Ethics. (3 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 assignments during practica. prereq: 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) This 0 credit course is designed to cover the expense of the Education Teacher Performance Assessment (edTPA) required by the State of Minnesota Board of Teaching to be complete by Education candidates during student teaching in order to be eligible for licensure in the State of Minnesota. pre-req: taken simultaneous with one of the following student teaching courses ECH 4600 or ELED 4600 or EDSE 4600, department consent; no grad credit.

EDUC 4991. 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 4995. 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 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: Graduate student; credit will not be granted if already received for EDUC 4081.

EDUC 5227. Number Theory for Teachers in Grade 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 5230. Indigenous Peoples and the Environment. (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 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 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 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 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 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.

Education, Secondary (EDSE)

EDSE 3206. Apprenticeship: Secondary School. (2 cr.; A-F or Audit; Every Fall & Spring) Fifty hours of experience in a high school, including observing, teaching, tutoring, working with individual students and small groups. Focuses on classroom management, multicultural education, and students with special needs. Weekly seminar. prereq: Admission to EdSe program, must be taken either after or concurrently with EDSE 3204.

EDSE 4100. Teaching in a Diverse Society. (3 cr.; A-F or Audit; Every Fall & Spring) Examination of cultural differences; planning instruction to accommodate individual differences in race, gender, ethnic background, cultural background, physical and mental development; including the diverse needs of learners in middle school and secondary school settings; integrated and exploratory curriculum, utilization of technology, community resources, structured service learning and...
humanizing classroom environments and classroom management procedures. prereq: Admission to EdSe program

EDSE 4204. Designing Learning Environments and Lessons. (3 cr.; A-F or Audit; Every Fall & Spring) The characteristics of effective teachers, various developmentally appropriate teaching strategies, design of lessons using Universal Backward Design framework, designing effective learning environments, goals and action plans, site data, collaboratively review of student work, collaborative planning, integrated and exploratory curriculum, content standards, teaching with technology, observation skills and teacher readiness will be presented with integration and analysis of materials. prereq: Admission to EdSe program; no grad credit

EDSE 4214. Teaching Content-Area Reading. (2 cr.; A-F or Audit; Every Fall, Spring & Summer) Teaching reading within 5-12 content-area courses as pedagogy for improving literacy. Developing an understanding of the brain, cognition, and reading. Exploration of stages of literacy, methods for promoting reading, and strategies for improving comprehension. Lesson planning for content-area reading. Diverse learners and critical literacy in the content-area classroom.

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 teaching of reading in various subject-matter fields, practicum experience. prereq: Major or pre teaching comm arts/lit students

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 problematic 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 Spring) Historical development of science education. Goals and purposes of science education in secondary schools; methods and materials; evaluation procedures; current trends. prereq: Admission to EdSe program, 3204 or instructor consent; no grad credit

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 5000. Introduction to Post-Secondary Teaching. (2 cr.; A-F or Audit; Every Fall) Introduction to Teaching will provide a brief overview of learning 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 1000. Into the World. (GLOBAL PER; 3 cr.; A-F or Audit; Every Fall) Facilitates the transition into college learning and student life at UMD and the College of Education and Human Service Professions. Introduces the promise and peril of global challenges in the 21st century and relates these challenges to local communities. pre-req: 1st semester CEHSP student; credit will not be granted if already received for UST 1000

EHS 4990. Individualized Integrated Major Capstone Project. (1-3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) EHS 4990 is the culminating course for students enrolled in the Individualized Integrated Major Program (IIMPs). The IIMP Capstone Project will be developed by the student in consultation with their project advisor(s). The project will be reflective of the interdisciplinary nature of the program and could take the form of either a research project or an applied project. All projects will require a written final report. The IIMP Committee will review and approve both the proposed and the completed capstone project. Students must complete a minimum of 3 credits for this course. pre-req: IIMP major, minimum 90 credits, instructor consent

Educational Administration (EDAD)

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 5111 or college 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, MN teacher tenure rules ad process for hiring and for dismissal, interpersonal communications, and human resource
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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) prereq: 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) prereq: 3235 or instructor consent

EE 4321. Computer Networks. (3 cr.; A-F or Audit; Periodic Fall) Network classification and services. Protocol and communication architecture. Hardware components: multiplexers, concentrators, bridges, routers, access servers. (3 hrs lect) prereq: 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) prereq: 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) prereq: Phys 2012 or 2015; credit will not be granted if already received for ECE 3611

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; prereq: BSEE or MSEE 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. prereq: WRIT 3130, BSEECE or BSEE or BSEP card, 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. prereq: WRIT 3130 or concurrent registration, BSEECE or BSEE or BSEP card, instructor consent; no Grad credit; credit will not be granted if already received for 4899

EE 4991. Independent Study. (1-3 cr.; A-F or Audit; Periodic Fall & Spring) Independent investigation, research studies, or survey of selected projects or problems. prereq: 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) Special projects not available in regular curriculum. Independent investigation, research studies, or survey of selected projects or problems. prereq: independent study; credit will not be granted if already received for 4951

EE 5161. Linear State-Space Control Systems. (3 cr.; A-F or Audit; Fall Even Year) State space representations 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 and integrated circuit design. Instructor consent. 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, multiprocessor, dataflow architectures, and supercomputers. prereq: 2325; credit will not be granted if already received for 4315

EE 5351. 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 roots, 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 in 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 have completed EE 5477. prereq: 5477 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)
Concepts and architecture of grid, smart grid and microgrid; resiliency under physical and cyber attacks; grid-distributed computing; Earth/Sun systems and operations. prereq: EE 5522 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- & 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, bi-linear 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 Classification. prereq: CS 1521, Math 3280; credit will not be granted if already received for 5831

EE 5995. Special Topics: (Various Titles (3 cr.; A-F or Audit; Periodic Fall & Spring)
Current problems and research. Discussions, selected reading, and/or invited speakers. prereq: instructor consent

Related courses and associated field experiences, admission to Student Teaching, no grad credit

ELED 4650. Student Teaching in Individual Subjects: K-8. (1-6 cr. [max 7 cr.]; S-N or Audit; Every Fall & Spring)
Student teaching in, e.g., art, music, physical education. Demonstrating subject matter competence, instructional strategies, and management skills; self-evaluation. prereq: Art education candidate or music education candidate, or physical education candidate or instructor consent; no grad credit

ELED 4991. Independent Study. (1-6 cr.; A-F or Audit; Periodic Fall & Spring)
Directed independent study, reading, and/or projects in elementary or middle school education of interest to student. prereq: department consent; no grad credit

Engineering (ENGR)

ENGR 1210. Introduction to Engineering. (2 cr.; A-F or Audit; Every Fall & Spring)
An introduction to the engineering profession with an emphasis on mechanical and industrial engineering. Topics include the roles and responsibilities of an engineer, the engineering disciplines, problem solving skills and tools, oral and written communication, teamwork, and the engineering design process. prereq: Math 1296

ENGR 1222. Introduction to Solid Modeling. (2 cr.; A-F or Audit; Every Fall & Spring)
An introduction to the use of modern solid modeling software. Generating 3D models and detailed 2D engineering drawings of parts, including proper geometric dimensioning and tolerancing. Modeling assemblies of 3D parts, and generating assembly drawings and exploded views. prereq: Math 1296, Engr 1210 (co-registration allowed)

ENGR 4001. Engineering Professionalism. (3 cr.; A-F or Audit; Every Fall & Spring)
Relationship of engineering to topics in economics, environment, sustainability, manufacturing, ethics, health and safety, society, and politics. Multidisciplinary engineering design lab experience. Written lab reports, proposals, professional letters, resume, Oral lab progress reports. prereq: BSEE or BSCH or BSIE or BSME student, minimum 60 credits, no grad credit

Elementary Education (ELED)

ELED 4600. Student Teaching. (6-12 cr. [max 24 cr.]; S-N or Audit; Every Fall & Spring)
Demonstrating competence in developing, implementing, and assessing curriculum based on learners' needs and district, state and national standards, exhibiting classroom and behavioral management skills, and collaborating with specialist. Consideration of issues related to the professional status and activity of teachers with reference to philosophical foundations, communication, job seeking skills, and professional organization will be interwoven. prereq: Successful completion of Blocks One, Two, and Three courses and associated field experiences, admission to Student Teaching, no grad credit

Engineering Management (EMGT)

EMGT 4110. Engineering Professionalism and Practice. (2 cr.; A-F only; Every Fall & Spring)
Professional responsibilities of engineers and expectations of industry and society. Ethics and law for engineers. Codes of ethics
and professional engineering societies.
Design, intellectual property, record keeping.
Environmental and safety issues in design.
Group processes, conflict management. Project
management. prereq: WRIT 3130 or 3150 or
3180 and BSCE or BSCE or BSEE or BSIE or
BSME or BSEP candidate within 2 semesters
of graduation or instructor consent; no grad
credit
EMGT 5110. Management of Engineers and
Technology. (3 cr.; A-F only; Fall Even Year)
Managing the synergism of people and
technology. Overview of management
functions, tools, methods. Planning,
organization, leadership, motivation, control,
quality, human resources, effective decision
making. prereq: EMgt student or department
approval
EMGT 5120. Advanced Project Management.
(3 cr.; A-F only; Spring Odd Year)
The course discusses the project life cycle, the
project management process, and the skills of
the project manager. The traditional approach
to project management and modern approaches
to project management under uncertainty
including Critical Chain Project Management
and Agile Project Management will be both
covered. prereq: EMgt student or department
approval
EMGT 5130. Operations Modeling and
Analysis. (3 cr.; A-F only; Spring Even Year)
This course will prepare students to analyze,
formulate, and solve optimization problems
under different conditions to facilitate
managerial decision-making. Topics
covered include data 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.
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,
technological issues, organization ethics, the
responsibility of engineer, moral thinking, risk/
probability, employer responsibilities,
product liability, and environmental
responsibilities. Provides a historical
perspective on society's environmental
consciousness 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
certainty 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 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

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 1525. 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,
focturing 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

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from these fictional accounts about crime and justice? What might we learn from them about storytelling, the literary imagination, and the tastes of readers? To address these questions, this course surveys a range of stories about detectives, crime, and the criminal mind. Authors might include Arthur Conan Doyle, Dashiell Hammett, Chester Himes, Patricia Highsmith, Sue Grafton, and Walter Mosley. Relevant movies, television shows, and true-crime writing might also be included.

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. Through discussion of a wide range of films and theoretical texts, students learn to think critically about the medium 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. pre-req: 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 well 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 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: Eng major or minor or teach comm arts/lit, major or minor or elem-middle educ comm/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: Eng 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. Acrical 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. Reconstituting the Past in African Diaspora Literature. (4 cr.; A-F or Audit; Fall Even Year)
Shakespeare is more popular today than he has principal focus of this course is to consider why devoted to promoting Shakespeare's works. A Company, the world-famous acting troupe is also the home of the Royal Shakespeare extravagently, and die. Stratford-upon-Avon also see where he returned to retire early, live students better understand his upbringing—they worked, such as Southwark and Blackfriars, tour the areas where Shakespeare lived and physical theatre. Students will also Shakespeare wrote his plays to capitalize on performances at modern reconstructions of the environment in his own day, and 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; admission to an approved study abroad program requires consent from the International Programs and Services 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 only; 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

ENGL 5097. Graduate Internship. (1-13 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: 8906, instructor consent

ENGL 5116. Advanced Writing of Fiction. (4 cr.; max 8 cr.; A-F or Audit; Periodic Spring) Writing of original fiction beyond the beginning stages; some experience required. pre-req: instructor consent

ENGL 5122. Advanced Writing of Poetry. (4 cr.; max 8 cr.; A-F or Audit; Periodic Fall & Spring) Study of poetics and poetry, with emphasis on student poems. pre-req: 3121 or instructor consent

ENGL 5222. Shakespeare. (4 cr.; A-F or Audit; Periodic Fall) Concentrated study of selected plays, with attention to Shakespearean criticism and scholarship. Recommended as the second course in Shakespeare. pre-req: 6 credits literature

ENGL 5270. Digital Literature, Video Games and Online Culture. (4 cr.; A-F or Audit; Spring Odd Year) Introduction to the genres and history of digital literature, and to the literary dimensions of online games, social media, and other network forms. Students will learn the theories, tools, and practices of digital literary study and criticism. pre-req: 8 credits of literature preferred

ENGL 5295. Special Topics in Early Period Literature (Various Titles to be Assigned). (4 cr.; S-N or Audit; Cyclic) Topics in early period literature (pre-1800 for British and global literatures, and pre-1865 for American literature) that are not included in regular curriculum.

ENGL 5312. Chaucer. (4 cr.; A-F or Audit; Every Fall & Spring) Introduction to Middle English. Reading and analysis of Chaucer's works, primarily Canterbury Tales and Troilus and Criseyde. pre-req: 6 credits literature

ENGL 5375. Modern Poetry. (4 cr.; A-F or Audit; Periodic Spring) Study of modern poetry written in English. pre-req: 6 credits literature

ENGL 5395. Special Topics in Late-Period Literature (various titles to be assigned). (4 cr.; max 8 cr.; A-F or Audit; Periodic Fall, Spring & Summer) Topics in later-period literature (post-1800 for British and global literature and post-1865 for American literature) that are not included in regular curriculum.
ENGL 5444. Childhood in Literature, History and Culture. (4 cr.; A-F or Audit; Every Fall & Spring)
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). (1-4 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. 19th Century British Literature. (4 cr.; A-F or Audit; Periodic Fall & Spring)
Advanced study of British literature and culture of the Romantic and Victorian periods. Authors and historical focus will vary according to instructor interest.

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 from the Colonial Era to the end of WWI. 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 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 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; Odd Fall 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 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 5902. 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

Environment and Sustainability (ES)

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 2095. 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 3300. Anthropocene Stories: Geology, Human Histories and Possible Futures. (3 cr.; A-F or Audit; Every Fall) Study of Anthropocene discourse and social ecological reality from scientific, social science and humanities point of view. Explore this rupture in geological history that collective and cumulative human activity has created, contemporary social and political movements that has arisen to meet the challenges this unprecedented reality, and possible futures that it may bring. Focus on comparing the assumptions and implications of these frameworks.

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

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. [max 6 cr.]; S-N only; Periodic Fall, Spring & Summer) Experience in the field of environment and sustainability with direct supervision in public agencies or relevant private firms. prereq: instructor consent; no grad credit

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, 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

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 and resulting in a written report or other expression of scholarly production. pre-req: instructor consent; no grad credit

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 1201

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 1202

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
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 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. Field 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 sport 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 3341. 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 EnEd 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 3342 or instructor consent; credit will not be granted if already received for EduC 4163

ENED 4300. Therapeutic Applications of Outdoor Education. (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 2300 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 delivery in various educational settings, with emphasis on formal classroom audience. Prereq: ENED 2300 or instructor consent

ENED 4565. Young Children, Nature, and Sustainability. (SUSTAIN; 3 cr.; A-F or Audit; Every Spring)
Focus on education for sustainability in an early childhood (infant-preschool age) context. Study of rational for merging education for sustainability and early childhood education, as well as recommended practices and possibilities for doing so. Also emphasized are skills for developing and implementing developmentally appropriate learning experience that support health development of young children and further education for sustainability goals. Prereq: ENED 2300, ENED 4555, no grad credit

ENED 4601. Wilderness Philosophy. (2 cr.; Student Option; Every Fall)
People and social forces that have influenced land-use related to designated wilderness; philosophical and historical basis for wilderness management. Prereq: No grad credit; credit will not be granted if already received for EduC 4601

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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
ENED 4805. Environmental Sustainability, Education and Culture in Cuba. (GLOBAL PER; 3 cr.; A-F or Audit; Summer Odd Year) Courses will be a short-term study abroad to Cuba with a focus on ecological sustainability, education, health and culture. Over the past two decades, Cuba has turned toward sustainable agricultural and environmental sustainability against the backdrop of scarce fossil fuel resources, they learned how to produce nearly 100% of their fruits and vegetables by organic means while building a more cohesive community. These efforts build upon the longer-term success of the Cuban literacy and health care campaign which, have been exported to the poorest communities around the world. In preparation for travel to Cuba, students will be given background readings prior to departure; the week prior to departure we will hold 3 face-to-face meetings to discuss Cuba's history, education, health and environmental sustainability. While in Cuba, students will engage in an in-depth study by visiting multiple sites of relevance and importance. Site may include: the Cuban Literacy Museum, organic farms, Museum of the Revolution, artists community, Latin American Medical School, an eco biosphere reserve and meet with Cuban citizens, leaders, workers and scholars. pre-req; instructor consent, no grad credit

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; 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. (2 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 5565. Young Children, Nature, and Sustainability. (3 cr.; A-F or Audit; Every Spring) Focus on education for sustainability in an early childhood (infant-preschool age) context. Study of rational for merging education for sustainability and early childhood education, as well as recommended practices and possibilities for doing so. Also emphasized are skills for developing and implementing developmentally appropriate learning experiences that support health development of young children and further education for sustainability goals. pre-req; graduate or post-baccalaureate student; credit will not be granted if already received for ENED 4565

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 5850. 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; Certificate or Masters Environmental Education student, instructor consent
ENED 5992. Readings in Environmental Education. (1-6 cr.; A-F or Aud; Every Fall, Spring & Summer)
Special complementary readings and discussion in advanced graduate student's field of interest in environmental or outdoor education. Readings exceed the scope and/or offering of regular courses. prereq: Certificate or Master Environmental Education student or instructor consent

ENED 5998. Outdoor Education Seminar. (1 cr. [max 3 cr.]; S-N or Aud; Every Fall & Spring)
Facilitated discussions and presentations of contemporary recreation research, curricula, and/or issues. prereq: instructor consent; credit will not be granted if already received for Rec 4998

Environmental Science (ESCI)

ESCI 2010. Surface Processes. (4 cr.; A-F or Aud; Every Fall)
Study of Earth surface processes emphasizing the origin and evolution of the earth's 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, CHEM 1153 or 1173 or instructor consent

ESCI 2210. Environmental Characterization and Monitoring. (4 cr.; A-F or Aud; Every Fall)
Scientific foundations of major environmental issues that impact society, including water, natural resources, and global climate change. Issues and human impacts will be explored through field and lab exercises designed to give the student hands-on experience in environmental characterization and monitoring. prereq: GEOL 1110 and (CHEM 1155 or 1162)

ESCI 3101. Nonrenewable Resources. (3 cr.; A-F or Aud; Every Fall)
Geology of nonrenewable resources and introduction to extractive industry methods and procedures. Formation and occurrence of natural resources, theory and practice of technologies associated with the production, separation, purification, conversion, consumption, and waste disposal of nonrenewable energy and mineral resources. prereq: 2210, CHEM 1151 or 1161, Phys 2011 or 2013 and 2014, or instructor consent

ESCI 3102. Renewable Resources. (3 cr.; A-F or Aud; Every Spring)
Principles of renewable energy, energy conversion, irreversible thermodynamics and thermodynamic engines, thermoelectric generators, turbines, photovoltaic conversion, 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 Aud; 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 Aud; 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 3203. Surface water and groundwater interaction. (3 cr.; A-F or Aud; Every Spring)
Water at the Earth's surface is constantly exchanged between wetlands, streams, lakes and shallow groundwater reservoirs. Human activities alter drainage patterns and impact surface water, runoff, and infiltration. Drainage of wetlands and construction of impervious surfaces increases the rate of storm water runoff and can lead to increases in flood frequency. Agricultural activities introduce fertilizers and pesticides into the soil, which can then contaminate surface water and groundwater reservoirs. Surface water is intimately connected to groundwater through complex hydraulic interactions that are difficult to observe and measure and therefore are often ignored in water management policy implementation. This course examines the natural processes of groundwater and surface water interaction; classification of lakes, streams, and wetlands; sources, measurement and interpretation of hydrologic and geochemical data; and, through numerous case studies, the impacts of human activities on surface water and groundwater. prereq: GEOL 1110 or 1610 or GEOG 1414, GEOL 2010 or ESCI 2010, MATH 1250 or 1290 or 1296 or 1596, CHEM 1153 or 1173 or instructor consent

ESCI 3291. Independent Study. (1-3 cr.; Student Option; Every Fall, Spring & Summer)
Directed, student motivated, study arranged with instructor and ESCI director before registration. prereq: instructor consent

ESCI 3296. Internship in Environmental Science. (1-2 cr. [max 4 cr.]; S-N only; Every Fall, Spring & Summer)
Practical work experience with an employer closely associated with 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 4102. Environmental Assessment. (3 cr.; A-F or Aud; 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 Aud; Every Spring)
This is an upper-division hydrology course covering the hydrologic cycle in the context of research. The course will cover the major components of the hydrologic cycle, including precipitation, snow hydrology, canopy interception, evapotranspiration, infiltration, soil water storage, runoff, streamflow and groundwater flow. The impacts of watershed management on water quality and quantity will be discussed using regional, national, and global examples, with an emphasis on solving real-world problems using hydrologic datasets. This course includes a 2-hour lab that meets once per week. prereq: CHEM 1153 or 1173, MATH 1290 or MATH 1296, minimum 60 credits; no credit granted if already received for ESCI 5201

ESCI 4863. Ecosystems Ecology and Biogeochemistry. (3 cr.; A-F or Aud; 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. prereq: BIOL 2801 or instructor consent; no grad credit

ESCI 5201. Introduction to Watershed Hydrology. (3 cr.; A-F or Aud; Every Spring)
This is an upper-division hydrology course covering the hydrologic cycle in the context of...
wildland watersheds. The course will cover the major components of the hydrologic cycle, including precipitation, snow hydrology, 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. This course includes a 2-hour lab that meets once per week. pre-req: CHEM 1153, MATH 1290 or 1296 or grad student; no credit granted if already received for ESCI 4201

EXSC 5450. Structural Geology. (5 cr.; A-F or Audit; Every Fall) Introduction to brittle and ductile deformation, including joints, faults, shear zones, and folds; deformation mechanism; elementary stress and strain theory. Labs include geometric, structural and kinematic analysis, and a group project. Course fee assessed. pre-req: graduate student or instructor consent

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. (3 cr.; A-F or Audit; Every Fall & Spring) Principles and practices that affect the learning and performance 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 3210. Exercise Adherence. (3 cr.; A-F or Audit; Every Fall & Spring) Fundamental concepts of exercise psychology. Physical activity models of involvement; exercise determinates and correlates; exercise interventions. pre-req: Minimum 60 credits, Exercise Science 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 3402. Electrocardiogram Foundations and Interpretation for Health and Medical Professions. (1 cr.; A-F or Audit; Every Fall, Spring & Summer) Electrocardiography teaches the fundamentals of reading and analyzing electrocardiograms, ECGs. Students will learn about common cardiac rhythm abnormalities and clinical application skills. pre-req: minimum 60 credits, HLTH 2030 or BIOL 3771; HLTH 2040 or BIOL 3772; HLTH 1104 or PHAR 5201; 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) Emphasis is on previously learned classroom material. 300 hours of clinical experience are required. pre-req: 3697, Athletic Training major, no grad credit

EXSC 4590. Research in Athletic Training. (3 cr.; A-F or Audit; Every Fall & Spring) Research design commonly used in athletic training research. Prepares students to conduct and analyze research projects in exercise physiology, 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 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 experience 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 physiology, 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 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. prerequisite: 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). prerequisite: department consent

**Finance (FIN)**

**FIN 1501. Consumer Finance. (3 cr.; A-F or Audit; Every Fall & Spring)**
The purpose of this course is to familiarize students with the basic concepts of personal finance at an introductory level with the overall goal of improving students' financial literacy. Topics discussed will include budget development, the time value of money, the use and management of common forms of debt such as student loans, credit cards and mortgages, and an introduction to saving and investing. Evaluation of current financial events and discussion of ethical issues in finance will also entail a significant portion of the course. prerequisite: credit will not be granted if already received for FMIS 1501

**FIN 3601. Corporate Finance. (3 cr.; A-F or Audit; Every Fall, Spring & Summer)**

Fundamental concepts of managerial financial decision making. Time value of money, valuation, risk and return, financial statement analysis, short-run financial management, capital budgeting, cost of capital, long-term financing, and corporate taxation. prerequisite: LSBE candidate or approved non-LSBE business administration minor or approved Finance minor or college consent; credit will not be granted if already received for FMIS 3601

**FIN 3612. Managerial Finance. (3 cr.; A-F or Audit; Every Fall & Spring)**

Intermediate conceptual and analytical applications in capital budgeting, funds flow, cost of capital, debt management, equity financing, mergers and acquisitions, business reorganizations, international financial management. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or approved Finance minor or college consent; credit will not be granted if already received for FIN 3612

**FIN 3619. Analysis of Financial Statements. (3 cr.; A-F or Audit; Every Spring)**

Analysis and interpretation of financial statements, presentation of analytical techniques, including trend, comparative, and ratio analysis. Use of computer assisted analysis prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or approved Finance minor or college consent; an Accounting/Finance double major cannot take FMIS 3619 to count as a Group 1 finance elective. Consult your finance adviser for details; credit will not be granted if already received for FIN 3619

**FIN 3644. Investment Fundamentals. (3 cr.; A-F or Audit; Every Fall & Spring)**

Comprehensive introduction to nature, problems, and process of evaluating particular securities and portfolio construction. Survey of basic principles of security analysis, analytical techniques, and investment policy for individual and institutional investors. Introduction to computer-assisted investment analysis. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or approved Finance minor or college consent; credit will not be granted if already received for FIN 3644

**FIN 3647. Financial Markets and Institutions. (3 cr.; A-F or Audit; Every Fall & Spring)**

Analysis of money and capital markets, savings-investment process, and financial institutions. Role of Federal Reserve and Treasury in financial market development; supply and demand for loanable funds; level and structure of interest rates. Asset/liability management. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or approved Finance minor or college consent; credit will not be granted if already received for FIN 3647

**FIN 3649. International Finance. (3 cr.; A-F or Audit; Every Fall & Summer)**

Comprehensive framework and analysis for financial management of international firm. International financial markets, exchange rates and international firms, elements of international investments, financing decisions, and strategy formulation. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or Finance minor or college consent; credit will not be granted if already received for FIN 3649

**FIN 3655. Risk Management and Insurance. (3 cr.; A-F or Audit; Every Fall)**

Foundations as well as the economic, financial and legal issues surrounding risk management and insurance. Students will discuss and analyze risk management techniques currently used in business and examine different types of insurance policies. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or approved Finance minor or instructor consent; credit will not be granted if already approved for FIN 3655

**FIN 3691. Independent Study Finance. (1-3 cr.; A-F only; Every Fall, Spring & Summer)**

For students wishing to do special work in finance that extends beyond, or is a greater depth than, regular course offerings. prerequisite: department consent; credit will not be granted if already received for FIN 3691

**FIN 3695. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 6 cr.] ; A-F or Audit; Periodic Fall & Spring)**

Exploration of specific finance problems, issues, and approaches. prerequisite: FMIS 3601 or FIN 3601, LSBE candidate or college consent; repetition of course credits includes credits earned between FIN 3695 and FIN 3695

**FIN 3697. Finance Internship. (1-6 cr.; A-F or Audit; Every Fall, Spring & Summer)**

Work-integrated learning program providing practical experiences within students' major. Students participating in approved programs 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 between FIN 3697 and FIN 3697 prerequisite: LSBE candidate, prior major coursework and consent of internship director; credit will not be granted if already received for FIN 3397

**FIN 4615. 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. prerequisite: FMIS 3644 or FIN 3644, LSBE candidate or Finance minor with 60 credits or grad student or college consent; credit will not be granted if already received for FIN 4615

**FIN 4616. 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. prerequisite: FMIS 3644 or FIN 3644, Acc 3101 or FIN 3619 or FIN 3619, Financial Markets major or minor: no grad credit; credit will not be granted if already received for FIN 4616

**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. prerequisite: 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 FIN 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. prerequisite: Financial Markets major or minor; no grad credit; credit will not be granted if already received for FIN 4620
FIN 4624. Applied Portfolio Management. (3 cr.; A-F or Audit; Periodic Fall & Spring) This course is designed 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 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. The course will focus on 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 5615. 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 including 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) 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, humanitaritanism, 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. Pre-req: 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.umd.edu/study-abroad/
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FST 1005. Art 1605, Fundamentals of Photography. (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 1006. DN 1101, Modern Dance Technique 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 1007. DN 1111, Jazz Dance Technique 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 1008. DN 1131, Ballet Technique 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 1100. ART 1009 Fundamentals of Drawing. (1-20 cr.; Student Option; Periodic Summer)
Study abroad course, pre-req: Requires approval from International Programs and Services Office

Foreign Studies (FST)

FST 1009. Mu 1501, Concert Band. (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 1010. Mu 1502, Symphonic Wind Ensemble. (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 1011. Mu 1503, Symphony Orchestra. (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 1012. Mu 1504, Chamber Orchestra. (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 1013. Mu 1505, Jazz Ensemble. (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 1014. Mu 1510, Concert Chorale. (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 1015. Mu 1511, University Singers. (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 1016. Mu 1512, Chamber Singers. (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 1017. Mu 1513, Vocal Jazz Ensemble. (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 1018. Th 1099, Production Practicum 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 1019. Th 1111, Acting Fundamentals 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 1020. Th 1199, Performance Practicum 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.

Study abroad course Admission to an approved study abroad program requires consent from the International Education Office.

FORS 1101. 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 1102. 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 1103. 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 1104. 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 1105. 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 1106. 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 1107. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course. Admission to an approved study abroad course requires consent from the International Education Office.

FORS 1108. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prereq: Admission to an approved study abroad program requires
Foreign Studies (FST)

FST 1110. Study in 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 1115. International Exchange Programs. (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 120. 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-affiliate study abroad programs. Enrolled students are responsible for working with the non-affiliate provider directly. In addition to UMD Study Abroad office, prereq: 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, humanitarianism, 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. pre-req: 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 prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 130. UMD Study in Sweden. (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.

Study Abroad Course prereq: 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 prereq: 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 prereq: 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 prereq: 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 prereq: 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 prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Program.

FST 1201. Geog 2552, Introduction to Maps & Cartographic Methods. (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 1202. Ling 1811, Introduction to 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.

FST 1203. Math 1024, Introduction Contemporary Mathematics. (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 1204. Math 1160, Finite Mathematics and Introduction Calculus. (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 1205. Math 1250, Precalculus Analysis. (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 1206. Math 1290, Calculus for Natural Sciences. (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 1207. Math 1296, Calculus 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 1208. Phil 1001, Problems of 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 1210. Phil 1018, Logic. (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 1211. Stat 1411, Introduction to 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 1212. Stat 2411, Statistical Methods. (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 1300. Amln 1103, Beginning 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 1301. Amln 1104, Beginning 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 1302. Amln 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. Amln 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; Periodic Fall & Spring)
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; Periodic Fall & Spring)
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)
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

FST 1334. Russ 1101, Beginning Russian 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 1335. Russ 1102, Beginning Russian 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 1336. Span 1101, Beginning Spanish I. (1-20 cr.; Student Option; Every Fall & Summer)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office
FST 1337. Span 1102, Beginning Spanish 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 1338. Span 1201, Intermediate Spanish 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 1339. Span 1202, Intermediate Spanish 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 1340. 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 1341. Ital 1101, Beginning Italian 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 1342. Ital 1102, Beginning Italian 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 1343. Chin 1101, Chinese I: A Practical Introduction to Everyday Mandarin Chinese. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 1344. Chin 1102, Chinese II: A Practical Introduction to Everyday Mandarin Chinese. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 1399. CHIN 1399 Chinese Language in China. (GLOBAL PER; 6 cr.; [max 12 cr.]; Student Option; Periodic Fall, Spring & Summer)
Study Chinese language and culture in a classroom setting and on field trips. The program will be held in Beijing, Shanghai, and at the Ocean University of China in Qingdao, China. Emphasis will be on language, culture and history. prereq: Required consent from the International Education Office.

FST 1400. Biol 1001, Biology 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 1401. Biol 1011, General Biology I. (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 1402. ChE 2001, Introduction to Environmental Engineering. (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 1403. Chem 1102, Aspects of Chemistry (w/lab). (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 1404. Chem 1113, Introduction to General, Organic, and Biological Chemistry 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 1405. Chem 1151, General 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 1406. Chem 1161, Honors Course: General Chemistry 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 1407. Chem 2172, General Chemistry. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study Abroad Course

FST 1408. Geog 1414, Physical 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 1409. Geol 1110, Introductory Geology. (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 1410. Geol 1130, Introduction to Environmental 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 1411. Phys 1001, Introduction to Physics 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 1412. Phys 1201, Mechanics. (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 1500. Ast 1040, Introductory Astronomy. (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 1501. Biol 2763, Biology of Women. (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 1502. ES 2803, Issues in Global Ecology. (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 1503. ChE 1011, Introduction to Chemical Engineering. (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 1504. MU 1504 Cross-Cultural Performance Experience in Panama. (1-4 cr.; Student Option; Periodic Spring)
Study Abroad course: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

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.

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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 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 requires 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: 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 1604. Econ 1023, 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 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. Soci 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.
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: Admitted 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: Admitted 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 an approved 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.

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 1813. Ger 2402, Germany Today. (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. Hlth 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.

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
FST 1903. Art 2814, Creating Across 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 1904. Art 1900, Visual Literacy. (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 1905. Arth 1303, History of World Art 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 1906. Arth 1304, History of World Art 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 1907. Arth 2305, Classical Themes in Art 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 1908. Arth 2390, American Art of 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 1909. Arth 2815, Women Artists in History. (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 1910. CSt 1010, Romanticism and Revolution. (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 1911. CSt 1022, The Bible as Literature. (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 1912. DN 1001, Introduction to the World of 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 1913. Engl 1001, Great American Authors. (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 1914. Engl 1101, Literature Appreciation. (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 1915. Engl 1507, Time and Place. (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 1916. Engl 1535, King Arthur in History, Literature, and Art. (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 1917. Engl 1575, 20th Century Literature. (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 1918. Engl 1582, Introduction to World Literature. (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 1919. Engl 1585, Australian and New Zealand Literature. (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 1920. Engl 1666, Tales of Terror. (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 1921. Engl 1805, Satire and Humor. (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 1922. Engl 1907, Introduction to Literature. (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 1923. Engl 2571, Contemporary Literature. (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 1924. Engl 2581, Women Writers. (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 1925. Fr 2315, French Cinema. (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 1926. Mu 1001, Introduction to 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 1927. Mu 1003, Beethoven to the Beatles. (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 1928. Mu 1005, Jazz 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 1929. Mu 2001, Ethnic and Folk Music of the World. (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 1930. Mu 2003, Survey of American 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 1931. Mu 2005, African Roots of American 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 1932. Mu 2007, The Power of 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 1933. Phil 1021, Classical Mythology. (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 1934. Th 1001, Introduction to Theatre 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 1935. Th 1051, Introduction to Film. (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 1936. Th 1071, Musical Theatre 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 1937. Th 2851, Film 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 1938. 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 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.

Foreign Studies (FORS)

FORS 1950. Principles and Business of Tourism Management. (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 1951. Oceanography. (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 1952. Personal Defense. (1 cr.; Student Option; Periodic Fall)
Study abroad prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 1953. Study in Worcester. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad University of Worcester

FST 2001. Special Topics: (Various Titles to be Assigned). (1-15 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 2002. Art 1400, Ceramics. (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 2003. Photography and Present Historic Sites. (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 2004. Art 1010, Drawing 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 2005. Understanding British Cinema. (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 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)
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

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. IntS 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. 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 2017. 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 2018. 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 2019. 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 2020. Emerging 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.

FST 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.

FST 2026. 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: Admission 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.

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: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 2032. Principles of Management 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 2034. Econ 2030, Statistics: Methods, 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.

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
FST 2038. Art 2907, Typography. (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 2039. Art 2911, Graphic 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 2040. Art 1301, Printmaking I, Lithography & Silkscreen. (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 2042. Introduction to 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 2043. Sociocultural Theory with Application. (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 2044. Beverages 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 2045. Introduction to 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 2046. Australia’s Terrestrial 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 2047. Crime and Deviance. (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 2048. Contemporary Australian Writing. (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 2049. Family Process. (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 2050. Biol 2201, Genetics. (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 2053. World 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 2054. Studio Art 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 2055. Ecological Systems. (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 2056. Biology of Marine 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 2057. Marine 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 2058. British Cinema Representation & Identity. (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 2059. Art, Music, Culture in 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 2060. Chem 2107, Introductory Environ 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 2061. Introduction to Cognitive/Biological 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 2064. Biol 2802, Ecology Laboratory. (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 2065. Art History/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 2066. FMIS 1201, Intro Business Information Systems. (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 2070. Art 1500, Jewelry and Metals. (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 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: Admission 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 2097. 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 2098. 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 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: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2019-08-29. 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 2113. Social Welfare/ Democracy. (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 Compar 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: Admission 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: Admission 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.

FST 2130. Italian Style. (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 2131. Art 1011, 2-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 2132. Art 1200, Sculpture 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 2133. Social Change 211. (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 2134. Introduction to Microbiology. (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 2135. Art 1300, Printmaking I: Intaglio, Relief. (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 2136. Art 1200, Sculpture 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 2137. Gender, Culture and Representation. (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 2138. Contemporary Crime Problems. (1-20 cr.; Student Option; 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: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: Admission to an approved Study Abroad program, required consent from the International Education Office.

FST 2155. Studies in Applied Sociology Youth Subculture. (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 2156. Microbiology. (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 2157. Sociology 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.

FST 2158. Sociology 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.

FST 2159. 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 2160. British Drama Now. (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 2161. Theatre in London. (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 2162. Organizational 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 2163. Corporate and Commercial Banking. (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 2164. Getting of Wisdom: Literary Youth and Maturity. (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 2165. Writing Non-Fictional Forms. (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 2166. Studies in Applied Sociology Catholic Church in Modern Ireland. (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 2167. Social Sciences 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 2168. Introduction to American 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 2170. Television Cultures. (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 2171. FTV: News, Current Affairs and Actuality. (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 2172. Introduction to Computing 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 2173. Introduction to Tropical Marine 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 2174. Marine Biology Laboratory. (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 2175. Edinburgh 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 2176. Polish Society and 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 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 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 prerequisite: Admission to an approved study abroad program, required consent from the International Education Office.

Foreign Studies (FST)

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

Foreign Studies (FORS)

FORS 2200. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FST)

FST 2200. Aboriginal Aus-Post Colonial Experience. (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 2201. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FST)

FST 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 Education Office

Foreign Studies (FORS)

FORS 2202. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FST)

FST 2203. International Education. (1-20 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

Foreign Studies (FORS)

FORS 2204. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FST)

FST 2204. Topics in Australian Literacy. (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 2205. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Foreign Studies (FST)

FST 2205. Finance. (1-20 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 2206. International Education. (1-20 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad course prerequisite: Admission to an approved study abroad program, required consent from the International Education Office

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
FST 2206. Gender Issues in the Contemporary Context. (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 2207. 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 2208. 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 2215. Management Statistics. (1-20 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 2221. What is 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.

FORS 2222. Academic Presentations. (1-20 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 2223. 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.

Foreign Studies (FST)

FST 2208. USA Today: Society, Culture, Identity. (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 2211. Jour 2001, Reporting and Writing 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 2212. Biol 2101, Cell 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 2213. Creative Writing 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 2214. Literature, Culture, 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 2219. Culture and Civilization of Australia. (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 2220. Regional History-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 2221. What is 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 2222. Academic Presentations. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

FST 2223. 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 2224. Analytical 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 2225. Chem 1114, Introduction to General, Organic, Biological 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 2226. Chem 1152, General Chemistry 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 2227. Pol 2700, Methodology and 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 2228. Czech 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.
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<tr>
<td>FST 2244</td>
<td>Hyperpower: The United States.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Summer</td>
</tr>
<tr>
<td>FST 2245</td>
<td>CS 1521, Computer Science II.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2246</td>
<td>CS 2511, Software Analysis and Design.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2247</td>
<td>CS 2521, Computer Organization &amp; Architecture</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2248</td>
<td>Exploring New Zealand History: Aotearoa.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2249</td>
<td>Chinese History and Social Institutions I.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2250</td>
<td>Flowering Plants.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2251</td>
<td>Fame and Celebrity.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2252</td>
<td>Intro to Empire: British and America Since 1815.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2253</td>
<td>Engl 2922, Honors Seminar: The Art of the Memoir: Reading and Writing Memoirs.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2254</td>
<td>Evolution, Biodiversity and Environment.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
<tr>
<td>FST 2255</td>
<td>PEP 2000, Foundations of Physical Education.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
</tr>
<tr>
<td>FST 2256</td>
<td>Introduction to British Civilization.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Spring</td>
</tr>
<tr>
<td>FST 2257</td>
<td>The Family in British Society 1800-1950.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Spring</td>
</tr>
<tr>
<td>FST 2258</td>
<td>International Business.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2259</td>
<td>International Business.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2260</td>
<td>Sociology and Future Societies.</td>
<td>1-20 cr.</td>
<td>A-F or Audit</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2261</td>
<td>British History/History of Scotland.</td>
<td>1-15 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2262</td>
<td>Reading Literature II: Worlds in Conflict.</td>
<td>1-15 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2263</td>
<td>Drama Into Film.</td>
<td>1-15 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
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<tr>
<td>FST 2264</td>
<td>Contemporary Drama.</td>
<td>1-15 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
</tr>
<tr>
<td>FST 2265</td>
<td>American Music in the 20th Century.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall &amp; Spring</td>
</tr>
<tr>
<td>FST 2266</td>
<td>Biodiversity and Environment.</td>
<td>1-20 cr.</td>
<td>Student Option</td>
<td>Every Fall, Spring &amp; Summer</td>
</tr>
</tbody>
</table>

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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 Environment: 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.

FST 2294. 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 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 2581, 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. Culture and Style in 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 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. An 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, 2D 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.

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 2353. Educational 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 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 2356. Biol 2101, Cell 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 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. Wine Studies 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 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 2398. ECE 2241 Signals and 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 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 2362. Chem 2522, Organic Chemistry 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 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 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 Symphony 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 consent from the International Education Office.

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) 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.

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Courses listed in this catalog are current as of 2019-08-29. 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 2412. Biology of 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 2413. Introduction to Computers. (; 1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

FST 2419. History of Western Art. (; 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 2420. Environmental 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.

FST 2421. The Evolution and Diversity of Life. (; 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 2422. Microbiology: Form, Function, and Metabolism. (; 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 2423. Biol 2801, Ecology. (; 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 2424. The Cold War: An International History. (; 1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prereq: 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. prereq: 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. prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 2427. Aotearoa/ New Zealand Screen. (; 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 2428. Conflicts and Crises in 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 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 program. Required 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 course requires
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

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 program 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 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 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.

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
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

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 course. 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.
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 course. 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) 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 2535. Orientation in Academic Studies for International Students. (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 2536. Business 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 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. ECE 2006 Electrical Circuit Analysis. (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 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.

FST 2551. 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 2552. Human Issues in Literature. (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 2553. Social Problems in Global Perspective. (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 2554. ARTH 2300 City As a Work of Art. (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 2892. ARTH 2892 Independent International Study. (GLOBAL PER; 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 (FORS)

FORS 2555. Thai Culinary Art Theory and Practice. (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)

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.

Foreign Studies (FORS)

FORS 2892. ARTH 2892 Independent International Study. (GLOBAL PER; 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.

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
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

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 (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 (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 (fors)

fors 3004. positive psychology. (1-20 cr.; student option; every fall & spring)

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. required consent from the international education office.

foreign studies (fors)

fors 3006. mgts 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.

foreign studies (fors)

fors 3007. phil 3421, oriental philosophies. (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 3008. the archaeology of medival church. (1-20 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 3009. 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. required consent from the international education office.

foreign studies (fors)

fors 3010. selling dubai-an emirate emerges from sand and sea. (1-20 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)
<table>
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<th>Course Code</th>
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<tr>
<td>FST 3010</td>
<td>IntS 3167, Study in Sweden Evaluation. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3014</td>
<td>Masters of Italian Cinema: Fellini. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3011</td>
<td>Hist 3320 American Popular Culture: 1940 to Present. (; 1-20 cr.; Student Option; Every Fall &amp; Spring) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3015</td>
<td>The Venice Film Festival. (; 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.</td>
</tr>
<tr>
<td>FST 3012</td>
<td>CSI 3020, Science and Civilization. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3016</td>
<td>Ger 3048, German Culture &amp; Civilization Study Abroad IV. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3013</td>
<td>Poetry Choices, British Periods. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3017</td>
<td>ELED 4600, Student Teaching in Belize. (; 6 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program. Required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3014</td>
<td>FA 3700, English Architecture. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3018</td>
<td>EDSE 4600, Student Teaching in Belize. (; 6 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3015</td>
<td>FA 3710, Shakespeare’s Dramatic Art. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3019</td>
<td>Aegean and Ancient Greek Art and Archaeology. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3016</td>
<td>Ger 3048, German Culture &amp; Civilization Study Abroad IV. (; 1-20 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3019</td>
<td>Religion and the Rise of Atheism, Theological Responses. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3017</td>
<td>ELED 4600, Student Teaching in Belize. (; 6 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program. Required consent from the International Education Office.</td>
</tr>
<tr>
<td>FORS 3020</td>
<td>EDSE 4600, Student Teaching in Belize. (; 6 cr.; Student Option; Periodic Fall &amp; Spring) Study Abroad course prerequisite: Admission to an approved Study Abroad Program, required consent from the International Education Office.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
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</tr>
<tr>
<td>FST 3021</td>
<td>Psy 3021, Experimental Design and Methods</td>
</tr>
<tr>
<td>FST 3022</td>
<td>Psy 3022, Cognition</td>
</tr>
<tr>
<td>FST 3023</td>
<td>British Women in the 20th Century</td>
</tr>
<tr>
<td>FST 3024</td>
<td>Spanish for Business</td>
</tr>
<tr>
<td>FST 3025</td>
<td>Spanish Business Area Study</td>
</tr>
<tr>
<td>FST 3026</td>
<td>CSD 3000, Deafness in Society: A Historical, Cultural and Educational Perspective</td>
</tr>
<tr>
<td>FST 3027</td>
<td>Global Identity</td>
</tr>
<tr>
<td>FST 3028</td>
<td>Anth 3695, Special Topics: Archaeology of Great Britain</td>
</tr>
</tbody>
</table>
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)

FORS 3032. Psy 3061, Physiological 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.

Foreign Studies (FORS)

FORS 3033. Comm 3700, Interpersonal Influence. (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)

FORS 3033. Italian 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.

Foreign Studies (FORS)

FORS 3034. 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 (FST)

FORS 3034. Psychology A. (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 3035. 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)

FORS 3035. HPER 3000, Organization and Administration of Health, Physical Education, and Recreation. (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 3036. Global Studies: World Geography, the Human Mosaic. (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)

FORS 3036. Econ 3036, Radical Economics. (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 3037. Introduction to Aboriginal People 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.

Foreign Studies (FST)

FORS 3037. Psy 3201, Social 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.

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)

FORS 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)

FORS 3039. Philosophy of Religion. (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 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)

FORS 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 incalculable 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)

FORS 3041. CSt 3715, Popular 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.

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 (FORS)
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.

FORS 3044. 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 (FST)

FST 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 (FORS)

FORS 3045. International Finance. (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 3045. Pol 3517, Western European Political Systems. (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 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. Art 3700, Drawing II. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to a 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 3243, Europe in Crisis in the 20th Century. (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 3048. International Studies 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.

Foreign Studies (FST)

FST 3048. Hist 3244, History of the Holocaust. (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 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 3051. Psy 3701, Personnel 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.

Foreign Studies (FORS)

FORS 3052. 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.

Foreign Studies (FST)

FST 3052. Psy 3022, Applied Methods and Measurements. (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 3053. Political Economy. (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 3053. History of Autonomous Finland. (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 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

FST 3065. FMIS 3601, Corporation Finance. (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 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 3067. 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 requires consent from the International Education Office.

**Foreign Studies (FORS)**

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 3068. FMIS 3647, 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.

**Foreign Studies (FST)**

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.

**Foreign Studies (FORS)**

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 requires consent from the International Education Office.

**Foreign Studies (FORS)**

FORS 3071. MU 3995 English Music Musicians. (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 3071. Finance Decision Making. (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 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.

**Foreign Studies (FST)**

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.

**Foreign Studies (FORS)**

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.

**Foreign Studies (FST)**

FST 3074. HR Management Eval/Program. (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 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: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FORS)**

FORS 3076. 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.
Study Abroad Course prereq: Admission to an approved study abroad program requires 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 (FORS)**

**FORS 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 (FST)**

**FST 3077. Sales Management 330.** (; 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 3078. Made in China.** (; 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 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

**Foreign Studies (FST)**

**FST 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 (FORS)**

**FORS 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 3081. HR Development and Knowledge 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 3082. Politics, War and Economy in the Age of Globalization: A History of Globalization.** (; 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 3083. Purchasing and Supply Chain 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 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 (FORS)**

**FORS 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.

**Foreign Studies (FST)**

**FST 3085. Production Management.** (; 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 3086. Ancient Mythologies.** (; 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 3086. Management Across Borders-Scand Perspec.** (; 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 3087. Principles of Management.** (; 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 3091. Telling My Story. (1-20 cr.; Student Option; Periodic Fall & Summer)
Study Abroad Course prerequisite: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 3092. Contemporary Australia. (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.

FORS 3093. Gentlemen of Italy, Most Willing Spirits: Comparing English and Italian Renaissance Literature. (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.

FORS 3094. Masterpieces of Italian Literature in Translation. (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.

FORS 3095. 18th Century Literature: Satire. (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.

FORS 3096. Geographies of Tourism, Planning and Development. (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.

FORS 3097. The Great Age of Italian Cities. (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.
Study Abroad Course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

**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: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**Foreign Studies (FST)**

**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)**

**FORS 3100. Biological and Cognitive 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 3100. Economic Business Environment.** (; 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)**

**FORS 3101. Latin American Literature and Cinema.** (; 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 3101. The Legal Business Environment.** (; 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)**

**FORS 3102. Media Culture and Diversity.** (; 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 3102. European Business.** (; 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)**

**FORS 3103. Reasoning and Argument.** (; 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 3103. Company Field 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.

**Foreign Studies (FST)**

**FORS 3104. Politics and Power in Roman Architecture: Augustus to Mussolini.** (; 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 3104. Management Communication in Latin America.** (; 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)**

**FORS 3105. Cross Cultural 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 3105. Management Communication in Latin America.** (; 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)**

**FORS 3106. Globalization, Business and Economy in Latin America.** (; 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 3106. Amin 3106, Indian-White 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.

**Foreign Studies (FST)**

**FORS 3107. Visualizing China: Film, Media 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.

**Foreign Studies (FST)**

**FST 3107. Scandinavian 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)**

**FORS 3108. ECH 4600 Student Teaching in Belize.** (; 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 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: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**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: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**Foreign Studies (FST)**

**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 3400, Contemporary Issues in World 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 3112. Marketing III.** (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 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 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. 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 (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 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)
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 Music and Culture.** (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 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 Science, Invention and Discovery.** (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 (FST)**

**FST 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 Europe in the 19th 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 3120. Political Economy Project 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 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: Admission 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 (FORS)**

**FORS 3123. 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: Admission to an approved study abroad program requires 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: Admission to an approved study abroad program requires 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.

FORS 3126. 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 (FST)

FST 3126. Introduction to Indigenous Australians. (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, required consent from the International Education Office.

Foreign Studies (FORS)

FORS 3129. Cognitive 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 3129. Aboriginal 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.

Foreign Studies (FORS)

FORS 3130. SOC 3831 Organizations and 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.

Foreign Studies (FST)

FST 3130. Adolescent Development and Adjustment. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)

Foreign Studies (FORS)

FORS 3131. Foreign Studies. (GLOBAL PER; 1-20 cr.; S-N only; 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 3131. 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.

Foreign Studies (FORS)

FORS 3132. Diplomacy and International Conflict. (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 3132. Drugs Across Cultures. (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 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.

Foreign Studies (FST)

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.

Foreign Studies (FORS)

FORS 3134. Strategic and Operational Marketing. (1-20 cr.; Student Option; Periodic Fall & Spring)
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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Offered</th>
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<tr>
<td>FST 3134</td>
<td>Geog 3362, Geographic Aspects of Outdoor Recreation</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3135</td>
<td>International Environmental Law</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3136</td>
<td>Art 3600, Photography II</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3137</td>
<td>Maritime Anthropology</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3138</td>
<td>The Global Economy</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3139</td>
<td>Spanish America Through its Writers</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3140</td>
<td>Comm 3400 Health Communication</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Spring</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
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<tr>
<td>FST 3141</td>
<td>Math 3280 Differential Equations with Linear Algebra</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3144</td>
<td>The European Union: History, Economics Politics and Economic Integration</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Fall</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3145</td>
<td>Organizational Behavior</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Summer</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
<tr>
<td>FST 3146</td>
<td>Perspectives on Experiential Learning</td>
<td>1-20 cr.</td>
<td>Student Option; Periodic Spring</td>
<td>Admission to an approved Study Abroad program requires consent from the International Education Office.</td>
</tr>
</tbody>
</table>

Courses listed in this catalog are current as of 2019-08-29. 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.

**Foreign Studies (FORS)**

**FORS 3146. Fr 3400, Culture and Civilization Study Abroad.** (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 3147. Lang 3091, Directed Study.** (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 3147. Sociology of Race.** (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 3150. West European 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.

**Foreign Studies (FORS)**

**FORS 3152. French Written Comprehension.** (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 3156. History of Irish Thought.** (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 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.
Contents of the page:

- **Foreign Studies (FST)**
  - FST 3157. Geog 3334, Urban & Regional Planning. (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 3158. POL 3600 Political Concepts. (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 3158. Protected Area 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 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: Admitted to an approved Study Abroad program, required 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: Admitted 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 Intervention. (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, required 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: Admitted 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)
  - 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. [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.
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. Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**Foreign Studies (FST)**

FST 3176. Studio Art 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 3168. Studio Art 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.

**Foreign Studies (FORS)**

FORS 3169. Healthcare Systems: US versus UK. (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 3169. Studio Art IV. (1-20 cr. [max 1 cr.]; Student Option; Periodic Spring)
Study Abroad Course prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**Foreign Studies (FORS)**

FORS 3170. Leadership in Ireland. (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 3170. Psy 3121, Abnormal Psychology. (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 (FORS)**

FORS 3171. IE 3115 Operations Research. (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 3171. Psy 3524, Basic Helping 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.

**Foreign Studies (FORS)**

FORS 3172. Australia's Terrestrial Environment. (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 (FST)**

FST 3173. ACCT 3201 Cost Accounting. (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 (FORS)**

FORS 3174. ACCT 3110 Accounting Information Systems. (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 3174. Hist 3462, History of Modern Japan. (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 3175. HLTH 3990 Holistic Health the Hawaiian Way. (3 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 (FST)**

FST 3175. Social Issues in Contemporary Poland. (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 3176. HIST 3095 T:City-State and the Italian Renaissance. (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.

**Foreign Studies (FST)**

FST 3176. Search for Self: Identity in Post War Polish Literature. (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 3177. HIST 3095 T:Holocaust From Origins to Memorialization. (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 (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.

**Foreign Studies (FORS)**

FORS 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.

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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 3198. Psych 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.

FST 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 - Study Abroad. (GLOBAL PER; 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 scholarship. Course generally involves travel, extensive outside of the classroom work, and a service learning component with post project reflection. pre-req: instructor consent; admission to an approved study abroad program requires consent from the International Programs and Services Office.

FST 3200. Field Studies and New Zealand Geology. (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 3201. Soc 3322, Law 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 3202. Educ 3412, the Computer in 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 3203. Learning in Studies in Society & the Environ. (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 3204. Women in Britain. (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 3205. Phil 3291, Current Social & Political Philosophy. (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 3206. Design Studio 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 3207. Government-Business 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 3208. Ger 3031, German Language Study Abroad 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 3209. Ger 3032, German Language Study Abroad II.** (1-5 cr. [max 10 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 3211. INTB 3211 International Business Down Under.** (GLOBAL PER; 3 cr.; A-F or Audit; Periodic Fall)
Study Abroad course. 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 and requires approval from International Programs and Services Office.

**Foreign Studies (FST)**

**FST 3211. Ger 3046, German Culture & Civ Study Abroad I.** (1-20 cr. [max 40 cr.]; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.

**FST 3212. Ger 3047, German Culture & Civ Study Abroad III.** (1-5 cr. [max 10 cr.]; Student Option; Periodic Fall)
Study abroad course. prereq: Admitted to an approved Study Abroad program, required consent from the International Education Office.

**FST 3213. Resource Evaluation and Planning.** (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 3214. Mesoamerican History 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 3215. Britain in the 20th Century.** (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 3216. A Literary & Historical Guide to London.** (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 3217. Art 3200, Sculpture II.** (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 3218. Psy 3200, Statistical Methods.** (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 3219. Comparative 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 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: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

**FST 3223. Engl 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: Italy; 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.
FORS 3241. MU 3997 Turkish American Wind Band. (1-4 cr.; Student Option; Periodic Spring)
Study abroad prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3242. MU 3997 University Singers in Denmark and Sweden. (1-4 cr.; Student Option; Periodic Fall & Spring)
Study abroad prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3243. Australian Indigenous Societies Prior to Invasion. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad prerequisite: 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 & Spring)
Study abroad prerequisite: 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 & Spring)
Study abroad prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3246. Literature in Teaching. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad prerequisite: Admitted to an approved Study Abroad program, required consent from the International Education Office.

FORS 3247. Engl 3115, Writing Fiction. (1-20 cr. [max 1 cr.]; Student Option; Periodic Fall & Spring)
Study abroad prerequisite: 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.

FST 3266. Learning from an Organizational Perspective. (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 3267. 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 3268. Comparative Cultures of East Asia. (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 3269. Nutritional 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 3270. Sweden’s Political and Social 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 3271. Aquatic Invertebrates. (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 3272. Engl 3121, Writing Poetry. (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 3273. Art 3933, Graphic Design 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 3274. Psy 3611, Learning and 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 3275. Coastal Environments. (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 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) 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.

FST 3300. Amln 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.

FST 3301. 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.

FST 3302. International Education. (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 3306. Fall Introduction to 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 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 (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.

**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, Spring & Summer)
- Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**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.

**FST 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.

**FST 3313. Hist 3313 Global Surf Culture - Study Abroad.** (4 cr.; A-F or Audit; Every Fall & 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 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.

**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.
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)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3343. Media Studies 210 The Australian 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 3344. Span 3044, Spanish Civilization 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 3345. Psy 3081, History and Systems of 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 3346. European Travel and Tourism. (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 3347. CS 3121, Interactive Multimedia 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 3348. CS 3211, Database System Concepts. (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 3349. Journalism 3401, Broadcast News 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 3350. Fine Arts Study - Palermo, Italy. (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 3351. Journalism - Television News. (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 3352. Organizational Psychology Across Cultures. (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 3353. Crime in International 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 3354. Psy 3996, Preprofessional Field Placement. (1-20 cr.; Student Option; Periodic Fall & Spring)
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
FST 3398. Logistics. (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 3399. Forest Meteorology/Hydrology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq: Admission to an approved study abroad program, required consent from the International Education Office

FST 3400. Spanish Civilization 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 3401. Soc 3336. Crime 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

FST 3402. War and Peace in World History. (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 3403. Computer Modelling in 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 3404. International Trade and Banking 305. (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 3405. Business Oriented Database Methodology and Web Design BI. (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 3406. Literary Studies: Worlds of Fantasy. (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 3407. Gender and 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

FST 3408. Introduction to Modern Political Thought (16th-18th centuries). (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 3409. Historical Projection of Three Cultures: Christians, Moors and Jews in Medieval Spain (8th-15th). (1-201 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 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. Prerequisite-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. Prerequisite-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. Prerequisite-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3425. Hist 3245, Early Modern England 1485-1688: Honors. (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 3426. CHE 3241, Principle of Particle Technology. (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 3427. HRMgtGroupB Human Resource Mgmt 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 3428. Pol 3570, Third World 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 3429. Directed Research-Ecology. (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 3430. Wildlife Ecology. (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 3431. Techniques of Wildlife Management. (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 3432. Physical Chemistry. (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 3433. Environmental Science. (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 3434. Environmental Policy, Socioeconomic Values. (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 3435. Hist 3463, History of Modern China. (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 3436. Peruvian Art, History and Culture. (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 3437. War and Peace in Bosnia. (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 3438. Math 3280, Differential Equations with Linear Algebra. (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 3439. Hist 3726, Modern Middle East: 18th Century-Present. (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 3440. Introduction to Studio Practice II. (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 3441. Peoples of the Pacific. (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 3442. Math 3355, Discrete Mathematics. (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 3443. Human Res Mgmt: Theory and Application. (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 3444. Project Management. (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 3445. Media Law. (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 3446. European Media & European Audiences. (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 3447. Personality and Individual Differences. (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 3448. Cross Cultural Psychology. (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 3449. Group Facilitation. (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 3450. Psy 3215, Human Sexuality. (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 3451. ECE 3151, Control Systems. (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 3452. ArtH 3331, European Architecture. (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 3453. ECE 3445, Electromagnetic Fields. (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 3454. History Seminar: Modern Ireland. (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 3455. Britain Transformed. (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 3456. Civil Wars, 1500-2000. (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 3457. Chem 3322, Biochemistry. (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.
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 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 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 3467. Psychology and Maori 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 3468. ME 3111, Fluid Mechanics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3469. Industrial Operations. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3470. British Life 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 3471. Ling 3102, Introduction to Syntax. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3472. Ling 3591, Independent Study in Linguistics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3473. Germany and 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 3475. Western Australian History Since 1829. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office

FST 3476. An Introduction to British Imperial Expansion 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 3477. Youth, Music 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 3478. Art 3030, Art in Technologies 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 3479. Pol 3221, Public Administration and Policy 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 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. CSI 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. (1-20.1 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

FORS 3505. AAS 3005 Roots and Rebellion: Study Abroad in Jamaica. (3 cr.; A-F or Audit; Periodic Summer) This three week study abroad course draws on history, literature, cultural studies, and music to explore Jamaican resistance to colonialism and slavery. Students will explore Jamaican culture first hand by visiting cultural heritage sites that attest to the Jamaican experiences of oppression, resistance, and rebellion. Presentations by local community leaders and heritage professionals will bring the history and culture of Jamaica alive for students. Prereq: consent of the International Programs and Services 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

FST 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.

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-
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

FST 3525. Applied Freshwater Ecology. (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 3526. Post War British Popular 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 3527. The Dead Sea Scrolls. (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 3528. Leadership in Sport and Leisure. (1-20 cr.; Student Option: Every Fall & Spring)
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.; Student Option: Every Fall & Spring)
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.; Student Option: Every Fall & Spring)
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.; Student Option: Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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)
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 20thC Britain. (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 3537. Nineteenth Century Australian 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 3538. Introduction to Theatre History. (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 3539. Motivational 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 3540. Field 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 3541. Art 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 3542. Chinese 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 3543. Art Studio Course. (1-20 cr.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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.; 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 3548. History of Colonial Latin America. (1-20 cr.; Student Option; Every Fall & Spring)
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.; Student Option; Every Fall & Spring)
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 Culture. (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 3551. Exploration of Brit Environ Hist 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 3552. Social Work Practice Contexts. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Admission 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-Admission 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-Admission 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-Admission 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-Admission to an approved study abroad program, required consent from the International Education Office

FST 3557. Soc Policy, Soc Exclusion and Anti-Oppressive 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 3558. Social Work Settings 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 3559. Psy 3211, Group Dynamics. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course Prereq-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission 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-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3574. WS 3896 International Fieldwork in Women's Studies. (1-6 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-Admission 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-Admission 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-Admission to an approved study abroad program, required consent from the International Education Office.

FST 3578. Vulcanology: Taking the Pulse of Etna. (1-20 cr.; Student Option; Every Fall & Spring) Study abroad course. Prereq-Admission 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) Study abroad course Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

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.

FORS 3591. Hlth 3991 Independent Study. (1-30 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.

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.

FORS 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 3593. Retail 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.

FORS 3594. Exchange in United Kingdom. (1-30 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.

FST 3594. Services 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 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: 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.

FORS 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)
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

**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. ArtH 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)
Study abroad course. Prereq-Admission to an approved study abroad program, required consent from the International Education Office.

**FST 3644. Revolutionary Ideas in the XVII 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 3645. Jazz 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 3646. Visualism 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 3647. Anthropology of 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 3648. Eating Disorders.** (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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. Prereq-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 Prereq-Admitted 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 Prereq-Admitted 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 Prereq-Admitted 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 Prereq-Admitted 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 CoAdmission 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 Prereq-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 Prereq-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. Prereq-Admitted 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. Prereq-Admitted 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. Prereq-Admitted 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 Prereq-Admitted 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 Prereq-Admitted 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 Prereq-Admitted 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 Prereq-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 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 prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3701. Peruvian Cultural Anthropology. (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 3702. ART 3700 Drawing II. (3 cr.; Student Option; Periodic Summer)
Study abroad prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FST 3702. Issues in Development Work. (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 3703. Cultures and Societies 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 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.

FST 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.

FST 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 Intl 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 course. 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.

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

FST 3712. The Essential Australia. (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 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-Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 3735. EIEd 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)
Study abroad course. Prereq: Admission to an approved study abroad program. Required consent from the International Education Office.

**FST 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. Prereq: Admission to an approved study abroad program requires consent from the International Programs and Services Office.

**Foreign Studies (FORS)**

**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 program. 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 program. 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. 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 3790. 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 3791. Biolog 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 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. 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 3794. Vertebrae 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 3795. 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 3796. American 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 3797. 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 3798. 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.

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
Foreign Studies (FORS)

FORS 3800. COMM 3800/GEOG 3800 Grassroots Activism in India. (4 cr.; A-F or Audit; Periodic Summer)
Taught in Bangalore, India where students will examine the process of social change in Bangalore and witness firsthand how disempowered groups such as tribal communities and religious minorities are advocating for their social and economic rights. Bangalore has grown tremendously in the last 10 years, as the city has become the center of India’s technology economy; however, the benefits of this growth have not been equally distributed. Students will examine the causes of disenfranchisement (including gender, caste, and colonialism) as well as how city has changed as a result of globalization and the liberalization of the Indian economy. This course has three goals: (1) Students understand the notions of community employment as theorized by scholars such as Paulo Freire, M.K. Gandhi, R.J. Ambedkar, as well as more contemporary Indian thinkers; (2) Students visit and learn about the cultural and historical forces that have shaped India, and (3) Students interact firsthand with activists and disenfranchised communities involved in struggles for human rights/empowerment. Prereq: Minimum 2.5 GPA, minimum 30 credits, instructor consent. Admission to an approved study abroad program requires 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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 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.

FST 3812. Natural Energy 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 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.

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, FIrgeure 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3834. Environmental History of Australia. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3835. Soc 3701, Social Psychology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3836. Anth 3628, Women in Cross-Cultural Perspective. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3837. Aquatic Ecology. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3838. Aquatic Ecology Lab. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3839. Intercultural Communication. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3840. Relationship Communication. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3841. Humanities: Classical-Medieval. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3842. Mktg 3741, Fundamentals of Selling. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement to an approved study abroad program. Required consent from the International Education Office.

FST 3843. French Civilization. (1-20 cr.; Student Option; Every Fall & Spring)
Study abroad course. Prereq-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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-Arrangement 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 program. Required 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. Pol 3403, Animal 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 3875. 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. (GLOBAL PER; 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 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 course. 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
FST 3914. Political and Social Change in Argentina and Latin America. (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 3915. Comparative History of Argentina and Latin America. (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 3916. Geohazards. (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 3917. Culture Shock-Cross Cultural Psychology. (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 3918. Psychology and Women. (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 3919. Advertising, Branding and Identity.com. (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 3920. Sociology of Health and Illness. (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 3921. Human Rights. (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 3922. European Economic Community. (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 3923. History of England 20th Century. (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 3924. History of England 20th Century. (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 3925. Civilization of 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 3926. Writing About Florence. (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 3927. Food as Sex, Gender, History, and Style: Anthropology and the Origins of Cuisine. (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 3928. Ethnography of Industrial Life. (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 3929. Conventions, Festivals and Events Management. (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 3930. Positive Psychology. (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 3931. Work Psychology: The Swedish Research Contribution. (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 3932. Adolescent 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 3933. Psychological Aspects of Leadership and Risk Management. (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 3934. Psychology and Women. (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 3935. Game 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 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. prerequisite 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. prerequisite Admission to an approved study abroad program requires consent from the International Education Office.

FST 3949. Approaches to Development. (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 3950. Modernity and Social Relations. (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 3951. Sociology of Culture. (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 3952. Culture and Interpersonal Interaction. (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 3953. Culture, Identity and Social Conflict. (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 3954. From Arbours to Mausoleums: English Gardens and their Buildings, 1500-2000. (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 3955. Psy 3381, Adult Development and Aging. (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 3956. Visual Merchandising. (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 3957. Personality and Emotional Intelligence. (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 3958. Work Psychology: the Swedish Research Contribution. (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 3959. Psy 3231, Psychology of Drug Use. (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 3960. Econ 3311 Money and Banking. (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 3961. Europe Since 1945. (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 3962. Eastern Christianity. (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 3963. Survey of Ancient Greek History. (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 3964. New Literatures (By Research). (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 3965. Cultural Tourism. (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 3966. Immunology II. (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 3967. Pathology I. (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 3968. The Archaeology of the Medieval Irish Church. (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 3969. The Development of the Castle in Medieval Europe. (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 3970. Warfare in the 20th Century. (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 3971. Visual Learning. (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 3972. Te Ara Pou-Leadership. (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 3973. Business Negotiations in Central and Eastern Europe. (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 3974. Tropical Ecology. (1-20 cr.; Student Option; Periodic Fall & Spring)
Study abroad course prerequisite 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 prerequisite Admission to an approved study abroad course. Required 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 requires 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.

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. (1-15 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.

FORS 4002. INTB 4495 International Business Down Under. (3 cr.; Student Option; Periodic Fall, Spring & Summer)
Study abroad prereq: Admission to an approved study abroad program requires consent from the International Education Office.

FORS 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 4014. IE 4812, Computer Integrated Manufacturing. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: 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 prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4016. IE 4827, Manufacturing Systems Project. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4017. IE 4870, Advanced Manufacturing Processes. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4018. Anth 4697, Anthropology Internship. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4019. Soc 4991, Independent Study in Sociology. (; 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 4020. Educ 4234, Science, Technology and Society. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4021. IntS 4891, Independent Study. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4022. MgtS 4731, Consumer Behavior. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4023. MgtS 4421, Managing Change. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 4024. MgtS 4831, Compensation Systems. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall)
Study Abroad Course prerequisite: 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 prerequisite: 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 prerequisite: 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 prerequisite: 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 prerequisite: 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 prerequisite: 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 prerequisite: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

Courses listed in this catalog are current as of 2019-08-29. 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.

**Foreign Studies (FST)**

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 4038. Mgmt 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. EIEE 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. ELEd 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.
consent from the International Education Office.

FST 4061. ChE 4111, Separations. (; 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 4062. Soc 4382, Victimology. (; 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 4063. Art 4972, Professional Practices. (; 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 4064. Art 4791, Individual Study in Drawing. (; 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 4065. Span 4004, Spanish Conversation. (; 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 4066. Conservation Biology. (; 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 4067. Soc 4911, Alcoholism and Other Addictions. (; 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 4068. Engl 4292, Literature Into Film. (; 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 4069. EdSe 4212, Teaching Adolescent Literature. (; 1-20 cr. [max 1 cr.]; Student Option; Periodic Fall) Study Abroad Course prereq: Admitted to a Study Abroad program, required consent from the International Education Office.

FST 4070. Comm 4505, Media Theory and Research. (; 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 4071. Soc 4925, Sociology of Rape. (; 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 4072. The Child and Contemporary Culture. (; 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 4073. Soc 4947, Sociology of Women. (; 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 4074. EdSe 4100, Human Diversity. (; 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 4075. Education & Democracy: A Comparative View. (; 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 4076. Span 4018, Hispanic America from Within. (; 1-20 cr.; Student Option; Periodic Fall) Study abroad prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4077. Span 4090, Aspects of the Hispanic World. (; 1-20 cr.; Student Option; Periodic Fall) Study abroad prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4078. International Development: Critical Perspective: Theory and Practice. (; 1-20 cr.; Student Option; Periodic Fall) Study abroad prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4079. Anth 4696, Field Research in Archaeology. (; 1-20 cr.; Student Option; Periodic Fall) Study abroad prereq: Admission to an approved Study Abroad Program, required consent from the International Education Office.

FST 4080. ArtH 4901, History of Graphic Design. (; 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 4081. Econ 4610, Industrial Organization. (; 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 4082. Art 4600, Photography III. (; 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 4083. Art 497, Graphic Design Internship. (; 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 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.
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

Foreign Studies (FORS)

FORS 4100. HLTH 4100 History of Health in Italy. (GLOBAL PER: 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 preq: Minimum 30 credits, no grad credit; admitted to an approved study abroad program, required consent from the International Education Office.

FST 4100. Mobility. (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 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. Mgt 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

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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
FST 4124. Chem 4364, Molecular Biology 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 4133. 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 4134. 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 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 & Summer)
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

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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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: Admitted 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 course. 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 course. 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 course. 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.

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. (3 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. Required 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, requiring students with understanding of social, cultural, economic and political environments of doing business in China through lectures, readings, hands-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.

FST 4235. Hlth 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.

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. Mgmt 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. Engi 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 & Summer)
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 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
consent from the International Education Office.

**FST 4249. Comparative Education Systems.** (4 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.** (4 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.** (4 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.** (4 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.** (4 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.** (4 cr. ; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

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### Foreign Studies (FORS)

**FORS 4255. Independent Study in Studio Art.** (GLOBAL PER; 1-20 cr. ; Student Option; Periodic Summer) Study abroad course, pre-req: Admission to an approved study abroad program requires consent from the International Programs and Services Office.

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### Foreign Studies (FST)

**FST 4255. Independent Study in Studio Art.** (4 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 4256. HCM 4595 Health Care in the Netherlands and France.** (4 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.** (4 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.** (4 cr. ; Student Option; Periodic Summer) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 4259. Translation from English to Spanish.** (4 cr. ; Student Option; Periodic Fall) Study abroad course prereq: Admission to an approved study abroad program requires consent from the International Education Office.

**FST 4260. 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.

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### Foreign Studies (FORS)

**FORS 4300. FORS 4300 - ENGL 4300 TH 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

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### Foreign Studies (FST)

**FST 4365. ME 4365 Global Sustainability Experience in Design & Manufacture.** (4 cr. ; Student Option; Periodic Summer) Study abroad prereq: Admission to an approved study abroad program requires
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.

FORS 4402. 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 4403. 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 4404. 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 4405. 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 4406. 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 4407. 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 4408. 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 4409. 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 4615 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

FORS 4800. 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 natural 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 and approval from the International Programs and Services office

FORS 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.

FORS 4802. ENED 4805 Environmental Sustainability, Education and Culture in Cuba. (3 cr.; A-F or Audit; Spring Odd Year) Courses will be a short-term study abroad to Cuba with a focus on ecological sustainability, education, health and culture. Over the past two decades, Cuba has turned toward sustainable agricultural and environmental sustainability against the backdrop of scarce fossil fuel resources, they learned how to produce nearly 100% of their fruits and vegetables by organic means while building a more cohesive community. These efforts build upon the longer-term success of the Cuban literacy and health care campaign which, have been exported to the poorest communities around the world. In preparation for travel to Cuba, students will be given background readings prior to departure; the week prior to departure we will hold 3 face-to-face meetings to discuss Cuba’s history, education, health and environmental sustainability. While in Cuba, students will engage in an in-dept study by visiting multiple sites of relevance and importance. Site may include: the Cuban Literacy Museum, organic farms, Museum of the Revolution, artists community, Latin American Medical School, an eco biosphere reserve and meet with Cuban citizens, leaders, workers and scholars. pre-req: Admission to an approved study abroad program requires consent from the International Education Office; no grad credit

Foreign Studies (FST)

FST 4839. GEO 4839/BIO 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. Eng 5821, History of English Language. (1-20 cr. [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 5010. Biol 5121, Plant Biochemistry and Molecular 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 5011. Biol 5833, Stream Ecology. (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 5012. Biol, 5861, Lake Ecology. (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 5013. Arth 5391, Directed Study Renaissance and Baroque. (1-15 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 cr.; 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. Engi 5591, 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 5022. Writ 5220, Document Design and Graphics. (1-20 cr.; 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 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 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 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 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 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 cr.; Student Option; Periodic Fall)
Study Abroad Course prereq: Admitted to an approved Study Abroad Program, required consent from the International Education Office.

FST 5029. Art 5991, Independent Work in Graphic Design. (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 5030. Art 5999, Special Projects in Design. (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 5031. Engi 5566, Irish Literary Revival. (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 5032. Jour 5197, Journalism Internship. (1-20 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 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 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. CSE 5541, Artificial Intelligence. (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 5036. Ling 5802, Applied Linguistics. (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 5037. CS 5541, Artificial Intelligence. (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 5038. CS 5631, Operating 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 5039. Writ 5197, Internship in 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 5044. 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 5046. Art 5991, Independent Study in Graphic 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 5047. Geol 5095, 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 5048. Geog 5446, Water Processes and 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 5049. Educ 5340, Interacting with Diverse Families. (1-20.1 cr.; Student Option; Every Fall & Spring)
Study abroad course. prereq: Admission to an approved study abroad program, required consent from the International Education Office.
FST 5050. CS 5721, Computer Graphics. (; 1-20 cr.; 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 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 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.

FST 5063. MicB 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 5067. Stat 5411, Analysis of Variance. (; 1-20 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 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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. Engl 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. (GLOBAL PER; 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.

FORS 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.

FORS 5990. HLTH 5100 History of Health in Italy. (GLOBAL PER; 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.

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 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 grade of C or higher; or instructor consent.

FR 3350. 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 themes, topics 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 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)
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. prerequisite: credit will not be granted if already received for GEOG 3564 or 4563 and 4564 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. prerequisite: 3563; credit will not be granted if already received for GEOG 3564 or 4563 and 4564 or GIS4565.

GIS 3580. Earth Imagery. (4 cr.; A-F only; Every Fall)
This 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. prerequisite: 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. prerequisite: 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. prerequisite: 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; Every Fall) 
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. prerequisite: 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. prerequisite: 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; Spring Odd Year) 
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 a variety of software, mostly ArcGIS, QGIS and MS Excel. prerequisite: 3563 and 3564 or 4565, STAT 1411 preferred; credit will not be granted if already received for GEOG 3585 or GIS 3585; no grad credit.

GIS 4586. Geoprocessing with Python. (4 cr.; A-F or Audit; Every Spring) 
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. prerequisite: 3563 and 3564 or 4565 preferred.
GIS 4099. 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. Distributed Geographic Information Services: Mobile and Web Based Solutions. (4 cr.; A-F or Audit; Every Fall)
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. Software used will vary, but may include ArcGIS Online, ArcGIS Pro, or open-source software. pre-req: Grad student, GIS 3563 or 4565; credit will not be granted if already received for GIS 4533

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 5571

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 5572.

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 is 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 5573.

GIS 5581. Digital Image Processing and Analysis. (4 cr.; A-F only; Spring Even Year)
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; Spring Odd Year)
The aim of this course is to provide graduate students interested in spatial data analysis with the means 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; Every Spring)
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 ads-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. pre-req: instructor consent

Geography (GEOG)

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 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. (DIVERSITY; 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 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., why some places are very rich while others are very poor. The impacts of colonialism, the Cold War, globalization, migration, 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 or GEOL 1110 or 1130 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. prereq: 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 3461. 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 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 of the region from a political ecology perspective. prereq: Minimum 30 credits or instructor consent

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. (3 cr. [max 6 cr.]; S-N only; Periodic Fall, Spring & Summer)

Experience in the field of geography with direct supervision in public agencies or relevant private firms. prereq: 60 credits completed and 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, and how those 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 differences result 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

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 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. ; 1-2 cr. ; 5 cr. ; 4 cr. ; A-F or Audit; Periodic Fall) 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

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 experience in teaching beginning courses in the department 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 & Summer) 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. ; A-F only; Every Fall, Spring & Summer) Independent problems 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 (GEOG)

GEOG 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.

GEOG 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.

GEOG 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.

GEOG 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.

GEOG 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. prereq: Credit will not be granted if already received for 2610.

GEOG 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; GEOG 1110 or 1610 or GEOG 1414, MATH 1250 or 1290 or 1296 or 1596, CHEM 1153 or 1173 or instructor consent

GEOG 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. prereq: 1110 or 1130 or 2610 or Ast 1040 or Geog 1414 or instructor consent

GEOG 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. prereq: 1110 or 1130 or 2110 or 2160 or Geog 1414

GEOG 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.) prereq: GEOG 1110 or 2110 and CHEM 11-3 or 1113 or 1145 or 1117 or instructor consent

GEOG 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. prereq: 2311

GEOG 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) prereq: Minimum 25 credits or instructor consent

GEOG 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. prereq: 2312

GEOG 3091. Independent Study. (1-2 cr. ; max 4 cr.; ; Student Option; Every Fall, Spring & Summer) Directed readings and projects on topics not normally covered in other courses. prereq: 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. prereq: 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. prereq: 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, stratal packaging, 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 geologic 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) prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 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 1172, MATH 1290 or MATH 1296, minimum 60 credits

GEOL 4311. Igneous Petrogenesis. (3 cr.; A-F or Audit; Fall Odd Year)
This course will investigate igneous processes including formation, differentiation, and crystallization of magmas. Thermodynamics of phase equilibria between silicate melts, minerals, and magmatic fluids will be emphasized. pre-req: GEOL 2312, MATH 1297; credit will not be granted if already received for GEOL 5311; no grad credit

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. prereq: 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. 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?? 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. 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. preq: Graduate Student or instructor consent

GEOL 5095. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 12 cr.]; A-F or Audit; Every 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. preq: 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 geochronology. Particular focus on paleolimnology, the analysis of lake sediment to reconstruct past climate and environment preq: 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. preq: CHEM 1153, MATH 1290 or 1296, or grad student

GEOL 5210. Glacial and Quaternary Geology. (4 cr.; A-F or Audit; Fall Even Year) Physics of glacier flow, processes of erosion and deposition, survey of glacial landforms, history and chronology of glaciation. Survey of geological and biological responses to changing environment resulting from climatic fluctuations during the last three million years of Earth history. Field studies on the glacial deposits of Minnesota. (2 hrs lect, 2 hrs field lab) preq: 3210 or grad student or instructor consent; credit will not be granted if already received for 4210

GEOL 5220. Advances in Paleoclimatology. (3 cr.; A-F or Audit; Spring Odd 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; climate cycles; El Niño; human impact on global climate. Offered alternate years. preq: 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. preq: 2110, Phys 2011 or 2013 and 2014, Math 1296 or Math 1250 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, surface and ground water, wellhead protection, well hydraulics, inverse models, and solute transport. Offered alternate years. preq: Math 1296 or 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. preq: 2312, (Phys 2011 of 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. preq: 3210 or 3420, Math 1296, (Phys 2011 or 2013 and 2014) or Grad student status or instructor consent

GEOL 5310. Advanced Petrology I. (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 microscopy. (2 hrs lect, 2 hrs lab) preq: 2312 or grad student

GEOL 5311. Igneous Petrogenesis. (3 cr.; A-F or Audit; Fall Odd Year) This course will investigate igneous processes including formation, differentiation, and crystallization of magmas. Thermodynamics of phase equilibria between silicate melts, minerals, and magmatic fluids will be emphasized. preq: GEOL 2312, MATH 1297; credit will not be granted if already received for GEOL 4311

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 beam generation, image formation, signal detection, and beam-sample interactions. Basic sample preparation methods for scanning electron microscopy will be presented and demonstrated in laboratory sessions. How characteristic x-rays are produced in a sample and how they are measured and quantified will also be presented. Use of the SEM to collect data and instruction on how to organize collected data in a logical manner. preq: Minimum 75 credits, Chem 1152 or 1156, Phys 2012 or 2015 and 2016, or Grad student or instructor consent

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 geoscientists. preq: 4240 or 5250, 4710 or grad student or instructor consent

GEOL 5335. 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. preq: 3326, 3315 or graduate student or instructor consent

GEOL 5360. Geologic, Geophysical, and Geochemical Methods of Exploration. (3 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. 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; preq: 4350 or 5350, (Math 1290 or 1296) or grad student or instructor consent; credit will not be granted if already received for 4360.

GEOL 5400. Astrogeology. (3 cr.; A-F or Audit; Every Spring) This astrogeology course will explore the formation and evolution of celestial bodies in our solar system such as planets and their moons, asteroids, comets, and meteorites. Topics will include determining internal structure of planetary bodies, dynamical processes, and search for “life”? 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. preq: Minimum 60 credits and Astronomy minor or Geology major or minor or Physics major or minor or graduate student or instructor consent

GEOL 5450. Advanced Structure. (3 cr.; A-F or Audit; Fall Even Year) Modern structural analysis: strain (paths, partitioning, history), tectonics, displacement, deformation processes, (mesoscopic,
grainscale, microstructures), and fabric evolution. Application of structural techniques to interactive problems (e.g., tectonics, hydrogeology, and planetary, sedimentary and economic geology). Offered alternate years.

Course fee assessed, prerequisite: 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, prerequisite: 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. Prerequisite: Math 1290 or 1296 or 1596, PHY1 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-requisite: GEOL 3210 or 3420 or 5260 or 5601 or BIOL 5833 or CE 3225 and instructor consent

GEOL 5711. Geochemistry. (4 cr.; A-F or Audit; Spring Odd Year)
Principles of solution chemistry, with emphasis on chemical equilibrium software to examine complex real work problems. Prerequisite: Math 1290 or Math 1297 and Chem 1152 or grad student or 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, prerequisite: 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. Prerequisite: 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, prerequisite: Math 1290 or 1296 or grad student, instructor consent; credit will not be granted if already received for 4820

German (GER)

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. Prerequisite: 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 (speaking, listening, reading, writing). Development of intercultural competency. Taught primarily in German. Prerequisite: 1-2 years high school German or 1101 or instructor consent

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. Prerequisite: 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. Prerequisite: 4 years high school German or 1201 or instructor consent

GER 2040. Berlin: Myth, Legend and Reality. (HUMANITIES; 3 cr.; A-F or Audit; Periodic Spring & Summer)
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 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 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. Prerequisite: 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)
Introduction to basic theories of drama and performance, survey of major German dramatists and current stage practices in Germany. Emphasis on class discussion and interpretive reading in German, with critical essays in German. Taught in German. Prerequisite: 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 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 4047. Sustainability in German-speaking Cultures. (SUSTAIN; 4 cr.; A-F or Audit; Periodic Fall)
This course offers the opportunity to learn about the discourses and cultures of sustainability in German-speaking countries. In this course you will be able to study several examples of successful sustainable development. Successful development in German-speaking countries has been possible due to several factors, including the coordination of economic strategies,
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: credit will not be granted if already received for SOC 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, interpretation of nutrition informatics, 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. Addresses the intersection of biology and life sciences with health promotion/protection. Leads to the American Red Cross Emergency Response 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, and skeletons. Intended for exercise science, public health, school health education, and physical education majors as well as other related professions. prereq: Exercise Science or Physical Education or Environmental and Outdoor Education or Public Health or Pre-Public Health major, [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
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.

HLTH 3000. Program Administration in Public Health. (3 cr. [max 6 cr.]; A-F or Audit; Every Spring) Organizational, administrative, and leadership theories pertaining to public health settings. Includes employer/employee communication, conflict management, risk management, grant writing, legal/ethical dimensions of program administration, and basic review of federal and state healthcare policies. Public Health or Pre-Public Health or Exercise Science or Physical Education or Environmental and Outdoor Education major, or Public Health minor, 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) Emphasis on health determinants across the lifespan and their impact upon well-being and disease in communities and populations. Topics include public health history, health and the health care system in the U.S., health disparities, and disease prevention/ control. Exploration of community-based organizations involved in health promotion efforts to address mental health, alcohol/drug abuse, environmental health and safety, and other issues affecting our communities. prereq: Minimum 30 credits. HLTH 1100

HLTH 3115. Consumer Health Education. (3 cr.; A-F or Audit; Every Fall & Spring) Concepts of marketing, analysis, selection, and decision-making regarding healthcare products, services, and providers. Prepares students to understand health policies, laws, ethics, and economics that influence healthcare systems at the state, national, and international levels. prereq: Minimum 30 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: Minimum 30 credits

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) Introduction to basic research methods for undertaking research and program evaluation within public health settings. Addresses research methodologies, needs assessment and evaluation processes, methods of data collection, ethical issues in research, and the importance of evidence-based approaches for addressing population health challenges. Minimum 45 credits, Public Health or Pre-Public Health, or Environmental and Outdoor Education major or Public Health or Environmental and Outdoor Education 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. Minimum 30 credits, for students seeking and admitted to the STEP (Secondary Teaching Education program), Public Health or Pre-Public Health or Physical Education or Exercise Science or Communication Sciences and Disorders major, or Public Health minor, or instructor consent.

HLTH 3200. Public Health Communication. (4 cr.; A-F or Audit; Every Fall) Health communication strategies to address population health challenges. Planning effective social marketing and health education/promotion interventions using electronic technologies, social media, and mass media tools. prereq: HLTH 3101, HLTH 3301, Public Health or Pre-Public Health major with Community Health Education/Promotion concentration, or instructor consent

HLTH 3303. Planning Community Health Interventions. (3 cr.; A-F or Audit; Every Fall & Spring) Assessment, planning, implementation, and evaluation of interventions related to the societal functions of public health, including human disease and health promotion/ protection. Covers public health concepts/values, professional/technical writing, and evidence-based models for behavior change. pre-req: HLTH 3101, HLTH 3301, Public Health or Pre-Public Health major with Community Health Education/Promotion concentration, or Public Health 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/promotion. Includes identification and prioritization of community health challenges with emphasis on assessment, planning, implementation, and evaluation of strategies to address behavioral factors. prereq: HLTH 3101, HLTH 3300, HLTH 3301, HLTH 3303, Public Health major with Community Health Education/Promotion 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: minimum 45 credits

HLTH 3308. Preventive and Public Health Methods. (3 cr.; A-F or Audit; Periodic Spring) Emphasis on employee needs assessment and risk appraisal, worksite health culture development, effective intervention planning, program evaluation and financial cost and benefits. prereq: minimum 45 credits

HLTH 3310. Foundations of Public Health. (3 cr.; A-F or Audit; Every Fall & Spring) Concepts, philosophies, values, and history of public health and health education. Provides an introduction to public health and health education career organizations, certifications, and research literature. Emphasizes skills and competencies needed by public health and health education professionals. Ethical issues and professional trends are discussed. prereq: HLTH 1100, Public Health or Pre-Public Health major, or Public Health minor, or instructor consent

HLTH 3302. School Health Education and Promotion. (3 cr.; A-F or Audit; Every Spring) Coordinated school health programming with a focus on comprehensive school health education for grades K-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) Assessment, planning, implementation, and evaluation of interventions related to the societal functions of public health, including human disease and health promotion/ protection. Covers public health concepts/values, professional/technical writing, and evidence-based models for behavior change. pre-req: HLTH 3101, HLTH 3301, Public Health or Pre-Public Health major with Community Health Education/Promotion concentration, or Public Health 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/promotion. Includes identification and prioritization of community health challenges with emphasis on assessment, planning, implementation, and evaluation of strategies to address behavioral factors. prereq: HLTH 3101, HLTH 3300, HLTH 3301, HLTH 3303, Public Health major with Community Health Education/Promotion 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: minimum 45 credits

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 Spring) Facilitation skills in health behavior change for individuals or small groups. Emphasis on theories and principles of behavior change, health coaching ethics/strategies, interpersonal skills, treatment planning, professional and technical writing, and HIPAA-compliant records management. Includes assessing, planning, implementing and evaluating behavior change processes. prereq: HLTH 1470, HLTH 3101, HLTH 3301, Public Health or Pre-Public Health major with Community Health Education/Promotion concentration, or Public Health 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; examination of environmental health policies; and possible solutions to environmental problems. prereq:
Minimum 45 credits, Public Health or Pre-
Public Health major, or Public Health minor, 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)
Special complementary work and investigation in undergraduate student's field of interest; survey of literature and resources available to health educators. prereq: instructor consent

HLTH 4000. The Health Education Specialist:
Skills and Application. (4 cr.; A-
F or Audit; Every Fall)
Application of core skills/competencies of the health education specialist used in professional climates to equip students to enter the workforce. Students draw upon skills and knowledge commensurate with a capstone course through focused activities and a 40-hour service-learning component in settings such as community, K-12, health care, business/industry, college/university, and university health services. Includes preparation for Certified Health Education Specialist (CHES) exam. prereq: HLTH 3300, HLTH 3303, Public Health major with Community Health Education/Promotion Concentration or instructor consent

HLTH 4100. Historical Perspectives of
Community Health Through Culture & Art in Italy. (GLOBAL PER; 3 cr.; A-F or Audit; 
Every Summer)
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 on 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. prereq: minimum 30 credits and instruction consent; no grad credit

HLTH 4105. Obesity: Causes and
Intervention. (3 cr.: A-F or Audit; Every 
Spring)
Obesity is a common, serious and costly health risk in the US, making it the focus of many public health programs. This course reviews the etiology of obesity and explores the behavioral, social and political aspects of obesity interventions. The associated health risks of obesity will be examined especially the impacts of these on children and youth. Special emphasis is placed on community, school and work place interventions. prereq: 1470, minimum 60 credits or instructor consent; no grad credit

HLTH 4400. Professional Health Coaching. (3 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring)
This course allows students to hone their
diabetes coaching skills learned in HLTH 3400 in an online setting through the health coaching certification program. This course is designed for students interested in becoming a health coach. prereq: HLTH 3400, instructor consent

HLTH 4700. Global Health. (1-3 cr.; A-F or Audit; Every Fall, Spring & Summer)
This course addresses global health topics, such as disease burdens, healthcare, nutrition, health inequalities, human rights, indigenous health, maternal/child health, and sustainability. It also examines goals, programs, and policies designed to improve the health of the global community. pre-req: HLTH 1100 and minimum 60 credits; no grad credit

HLTH 4996. Internship in Health Education. (1-15 cr.; S-N or Audit; Every Fall, Spring & Summer)
Supervised entry-level health education practical experience in hospital, worksite, voluntary, or official agencies. Number of settings is limited to two. prereq: HLTH 3305, HLTH 4000, Public Health major with Community Health Education/Promotion concentration or instructor consent

HLTH 5100. Historical Perspectives of
Community Health Through Culture & Art in Italy. (GLOBAL PER; 3 cr.; A-F or Audit; 
Every Summer)
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 on 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. prereq: minimum 30 credits and instructor consent

HLTH 5991. Independent Study. (1-6 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 proposal should be approved before course is taken by graduate students. prereq: instructor consent, non-degree seeking or grad student; maximum of 6 credits can be applied toward degree

HLTH 5992. Readings in Health. (1-4 cr.; A-
F or Audit; Every Fall & Spring)
Special complementary readings and discussion in advanced or graduate student's field of interest in health and health education. prereq: instructor consent

HCM 4510. Medical Sociology. (3 cr.; A-F only; Every Fall)
Introduction to the 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 4515. Long Term Care Policy and
Management. (3 cr.; A-F or Audit; Every 
Spring)
Overview of current management issues in long term healthcare. Includes aging simulation, payment trends, insurance standards, HR, risk management, etc. pre-req: LSBE candidacy, HCM 4520

HCM 4520. Health Care Organization and
Management. (3 cr.; A-F only; Every Fall & Spring)
Studies the organizational structures, types of governance and management issues of the American health care system. prereq: LSBE candidate or approved Health Care Management minor or college consent. MgtS 3401 preferred but not required, no grad credit

HCM 4530. Legal Aspects of and Ethics in
Health Care. (3 cr.; A-F only; Every Fall & Spring)
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, 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; Fall 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, FMIS 3601, LSBE candidate or approved Health Care Management minor or college consent, no grad credit

HCM 4560. International Comparisons of
Health Care Systems. (3 cr.; A-F only; Every 
Spring)
Explores various health care systems offered around the world by evaluating their characteristics, issues and reforms. prereq: LSBE candidate or approved Health Care
Management minor or college consent, no grad credit

HCM 4570. Health Care Quality Management. (3 cr.; A-F only; Every Fall & Spring)
Covers basic principles of quality and patient safety measurement and improvement in health care. Methods for measuring health outcomes and satisfaction as well as regulatory and accreditation requirements affecting quality of care in hospitals, nursing homes, and other areas of healthcare will be discussed. prereq: 4520, LSBE candidate or approved Health Care Management minor or college consent; no grad credit

HCM 4580. Health Services Data and Analysis. (3 cr.; A-F or Audit; Every Fall)
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 4591. Independent Study. (1-3 cr.; A-F only; Every Fall, Spring & Summer)
Special work in health care management that extends beyond or in greater depth than regular course offerings. prereq: LSBE candidate, instructor consent, no grad credit

HCM 4595. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 9 cr.]; A-F only; Every Spring)
Specific health care management problems, issues, and approaches. prereq: LSBE candidate or department consent, 4520 or instructor consent, no grad credit

HCM 4597. 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 (or fewer) credits, consent 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; 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 offers 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 outcomes and satisfaction as well as regulatory and accreditation requirements affecting quality of care in hospitals, nursing homes, and other areas of healthcare will be discussed. pre-req: MBA student or department consent

HCM 5580. Health Services Data and Analysis. (3 cr.; A-F or Audit; Every Fall)
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

Health, Physical Educ and Rec (HPER)

HPER 3100. Risk Management. (2 cr.; A-F or Audit; Every Fall)
Proactive approach to managing risks associated with conducting health, physical education, and recreation programs. Emphasis on planning for a safe environment. prereq: Major in Exercise Science or Environmental and Outdoor Education or instructor consent

HPER 3300. Health and Physical Education in the Elementary School. (3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Developing health and physical education programs for the elementary school classroom teacher. Emphasis on planning appropriate health and physical education lessons and teaching developmental movement experiences, prereq: IESE Major, successful completion of IESE 1010

HPER 4999. Senior Project. (3-12 cr.; S-N or Audit; Every Fall & Spring)
Selection and completion of a project approved and supervised by faculty. prereq: Hlth Educ or PE or REC or Ex Science candidate, minimum 90 credits, instructor consent

History (HIST)

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 & Summer)
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: geography and 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 continue 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 2095. Special Topics in History (Various Titles to be Assigned). ( ; 1-4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Special Topics in History to be assigned.

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 Condobile, 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; beliefs; observances; and religious and socio-political issues of the present day, prerequisite: 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. prerequisite: 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 World 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 ecologies following European contact. These histories, in turn, will illuminate their reading of scientific papers and research. prerequisite:

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 World 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 ecologies following European contact. These histories, in turn, will illuminate their reading of scientific papers and research, prerequisite:

HIST 2355. United States Military History. ( ; 4 cr. ; A-F or Audit; Periodic Fall & Spring) Explore the history of the United States military from the colonial period to the present in the context of broader patterns of American history.

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 perspective of history, the course seeks to provide students with some basic knowledge of major Chinese cultures in a variety of fields, from philosophy, law, calligraphy, civil examination to gender, architect, art, medicine, and marital arts. It also intends to teach students the origin, development, and end of certain cultures or practices in the course of China’s long history and their impacts on neighboring countries such as Korea, Japan, and Vietnam.

HIST 2410. Modern China, Japan, Korea, Vietnam and East Asia. ( ; 4 cr. ; A-F or Audit; Periodic Fall & Summer) This course is an introductory study to the history of major East Asian countries such as China, Japan, and Korea. It intends to examine the political, cultural, legal, diplomatic, religious, military history in this region and the interactions among themselves. But, in the modern period, with the heavy influence of the West, the history of East Asia is no longer restricted in East Asia, it has become an integral part of the world history. Therefore, the course seeks to explore the western influence on East Asia and East Asian countries; responses to the West.

HIST 2515. Ancient to Pre-Modern African History. (HUMANITIES; 4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall) This course considers African peoples and states from Ancient times through the Pre-Modern era. The unique geography, vast history, varied political, 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 2700. Islamic Mysticism and Yoga: Travel, Learning, and the Spiritual Quest. ( ; 4 cr. ; A-F or Audit; Periodic Fall & Spring) The course examines the pre-modern history of travel and cultural exchange between Muslim Sufis (mystics) of west and central Asia and Hindu yogis of south India in their common search for spiritual meaning. Because the believe that physical as well as cognitive learning is inherent to the spiritual quest, this course, which historicizes yoga and sufic movement, includes a movement component (led by instructor).

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. prerequisite: Credit will
HIST 3038. History of Christianity: Origins to 1054. (4 cr.; A-F or Audit; Periodic 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. recommended prereq: 1207

HIST 3055. 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 CSI 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). (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 leading discussions, conferences with professor about teaching issues, prereq: History major, completion of 20 credits of 2xxx and above history courses with GPS of 3.3, completion of 90 credits, instructor consent

HIST 3133. Ancient Greece from Homer to Alexander. (4 cr.; A-F or Audit; Every Fall & Spring) Early history of Greek world from Heroic Age to death of Alexander the Great, 850-323 B.C. prereq: Credit will not be granted if already received for HIST 3333 or HmCl 3333

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 effort to dominate the state. The failed reform movement of the Gracchi brothers guaranteed that a polarization 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; Periodic Fall & Spring) This course focuses on the turbulent history of Europe in the 20th century, particularly the causes, development, and consequences of the First and Second World Wars. It will explore the world wars as global phenomena and consider the ways in which these events have shaped contemporary geopolitics and the international world order. The course will address the political, military, cultural, economic and social transformations that characterized this period and influence our society today.

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 meanings 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. (GLOBAL PER; 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, cultural, political and social transformations of the Russia Empire during the epoch of the Romanovs from the 17th to the early 20th centuries. We will study the accomplishments of the dominating political figures of the period, such as Peter the Great and Catherine the Great, as well as the experiences of the diverse populations who lived across the wide expanse of the empire. In doing so, we will gain insight into the causes of the downfall of the imperial regime in 1917.

HIST 3265. The Soviet Experiment: Russia, the USSR, and Contemporary Russia. (GLOBAL PER; 4 cr.; A-F or Audit; Periodic Fall, Spring & Summer) 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 under 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). Through written and oral assignment, student will develop their critical reading, writing and speaking skills. Credit will not be granted if already received for HIST 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
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) 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: student 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. prereq: 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 class 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 and the career of Abraham Lincoln. This 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 3575. Jews & Poles: Entangled Lives, Cultures and Memories in the 20th Century Poland - Study Abroad. (GLOBAL PER; 4 cr.: A-F only; Periodic Summer) Study abroad in Poland. This course focuses on the history, experience and memory of Jewish life in Poland. One of the focuses of the course will be the experience of discrimination and the history of the Holocaust in Poland. However, the course will also examine the ways in which both Poles and Jews contributed to and engaged in a rich cultural, social and economic life in communities across the region and, in some cases, continued to do so today. The course will consider the history and legacies of the co-existence, interdependence, entangle between Poles, Jews, and other minority populations in this diverse geographic space. We will also explore the contemporary debates over the politics of commemoration of Holocaust sites and Jewish life in Poland today. Pre-req: minimum 30 credits, instructor consent; admission to an approved study abroad program requires consent from the International Programs and Services Office

HIST 3595. Special Topics African History (various titles to be assigned). (4 cr. [max 16 cr.]: A-F or Audit; Periodic Spring) Topics on any period or area in the history of African history not included in the regular curriculum.

HIST 3720. History of Iran. (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 grade 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 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 in 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. prereq: 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 3895. Honors Special Topics. (CDIVERSITY; 3 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

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 Experiment 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 2160 or CE 2170, Stat 3411 (concurrent registration is allowed) and BSIE or BSME 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. (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 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. prereq: BSIE candidate, no grad credit

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 with 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 BSChE or BSECE 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 decisions 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. prereq: Chem 4341 or equivalent

Integrated Elem Special Educ (ISEE)

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. prerequisite: 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. prerequisite: 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)
The first of three required literacy courses, the teacher 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. prerequisite: Admission to the IESE program, successful completion of IESE 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)
In the second 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. prerequisite: Admission to IESE program and successful completion of Block 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. prerequisite: 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. prerequisite: Admission to the IESE 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 reflection 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. prerequisite: Admission to IESE program and successful completion of Blocks One and Two courses and associated field experiences; credit will not be granted if already received for ELED 3356

IESE 3434. 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 3434 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. prerequisite: Admission to IESE 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 3434

IESE 3436. 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. prerequisite: Admission to IESE 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 3436

IESE 3436. 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. prerequisite: Admission to IESE program; no grad credit; credit will not be granted if already received for ELED 3436

IESE 3437. Teaching Elementary Social Studies II. (2 cr.; A-F only; Every Fall & Spring)
Exploring 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. prerequisite: Admission to IESE 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 3437

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. prerequisite: 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-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 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. prerequisite: 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.
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 2003. 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.

**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 Saint Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. pre req: 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.

**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 Saint Scholastica and the University of Wisconsin Superior and any other institution with whom such an agreement exists. pr erq: No grad credit; 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.

**IS 2001. Sustainability Across Disciplines.** (SUSTAIN; 4 cr.; A-F or Audit; Every Fall & Spring)

An introduction to academic disciplines and interdisciplinarity 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. pre req: instructor consent; credit will not be granted if already received for IS 3099

**Interdisciplinary Studies (IS)\textbf{\textit{}}**

**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, hands-on project and travel to China. pre req: LSBE candidate, consent of instructor

**INTB 4211. Innovation in Ireland.** (GLOBAL PER; 3 cr.; A-F only; Every Summer)

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. pre req: minimum 2.6 GPA, junior status, instructor consent

**INTB 4221. Health Care and Families 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
Bargaining: Negotiating Across Cultures.

INTS 3458. International Negotiation & Bargaining: Negotiating Across Cultures. (3 cr.; A-F or Audit; Periodic Fall) Negotiation is a critical skill in the global economy. This course provides students with an understanding of the influence of culture on negotiation processes and outcomes. Topics include cultural dimensions, communication style, and negotiation strategies.

Cultural understanding and misunderstanding can determine the outcome of international negotiation and bargaining. Word choice becomes particularly significant in global negotiations. In this class, we explore how international solutions in various areas, such as the environment, business, politics, and human rights, are produced through negotiation and influenced by culture, language, and behavior. pre-req: minimum 30 credits

INTS 4100. Seminar in International Studies. (4 cr.; A-F or Audit; Every Fall & Spring) Analysis of supervised research and writing on selected topics. pre-req: Pol 1050, 60 credits including 8 upper division credits approved INTS courses and instructor consent

Journalism (JOUR)

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 & Summer) 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. (Course may be offered as a short-term study abroad program.)

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.

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 advance digital storytelling, magazine writing, podcast production, 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. pre-req: 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 projects, 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.

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. preq: 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. preq: 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. preq: 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. preq: 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. Preq: 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. preq: Grad Student; credit will not be granted if already received for 5102

JOUR 5102. Editing II: Newsroom Practicum. (3 cr.; A-F or Audit; Periodic Fall & Spring) Supervised professional experience as a working staff member with a newspaper, magazine, broadcast station or other communications organization. preq: College Grad or grad student, instructor consent

Labovitz Schol of Business/Econ (LSBE)

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. preq: 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. preq: 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: 1102 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 Literary Studies and the Digital Humanities, this course...
Limnology (LIM)

LIM 5010. Integrated Approaches to the Study of Inland Waters. (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. In this course, 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, problem solving, and student-led discussions and presentations. An optional companion laboratory and practice course (LIM 5011) is associated with this course where additional foundational and fundamental limnological techniques are taught. pre-req: graduate student 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 course 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-req: pre or co-req LIM 5010, grad student or instructor consent

LIM 5012. Integrated Approaches to the Study of Inland Waters II. (3 cr.; A-F or Audit; Every Spring)
Continuing from LIM 5010, this is the second semester of an interdisciplinary introduction to 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 indepth, 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-req: 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-req: previous or concurrent LIM 5012 or instructor consent

LIM 5014. Chemical Limnology. (2 cr.; A-F or Audit; Fall Even 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 geochemistry. Offered alternate years. pre-req: Math 1297, Phys 1002 or 1202, Chem 1152 or 1162, or grad student; Credit will not be granted if already received for 5001

LIM 5015. Paleolimnology. (1 cr.; S-N or Audit; Periodic Spring)
A one-week intensive course on the use of lake sediment core samples to infer past climate and environmental conditions. pre-req: LIM 5101, or instructor permission

LIM 5016. Research Frontiers and New Directions in Limnology and Environmental Science. (1 cr.; S-N or Audit; Periodic Spring)
An interdisciplinary graduate seminar with the dual goal of reviewing most significant current developments in limnological science and helping students identify most significant knowledge gaps in their disciplinary research. This course involves guest lectures, student presentations and discussions. It aims to provide students with guidance on
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. prerequisite: 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) 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 languages? 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. prerequisite: 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 textual data and performing quantitative analyses on it as well as performing ethnographic descriptions of online communities. Students will also examine the way interpersonal relationships 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. prerequisite: 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) Directed reading and/or research. prerequisite: 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. prerequisite: 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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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; repetition of course and credits includes both FMIS 3397 and MIS 3397 prerequisite; prerequisite: LSBE Candidate, prior major coursework, consent of Internship Director; credit will not be granted if already received for FMIS 3397.

MIS 4220. Medical Informatics. (3 cr. ; A-F or Audit; Every Fall) Introduction to the convergence of computing, information systems, and healthcare with a focus on managing information and developing systems that leads to more effective decisions and actions in healthcare. Covers the standards, ethics and security of the electronic health record. prerequisite: FMIS 2201 or MIS 2201 or FMIS 3201, LSBE candidate or college consent, no grad credit; credit will not be granted if already received for FMIS 4220.

MIS 4221. XML and Information Management. (3 cr. ; A-F or Audit; Every Fall & Spring) Intermediate courses that focuses on the fundamentals of the XML specification of the W3C and its related technologies, including XML Schema, XPath, XQuery, and XSLT. Writing well-formed and valid XML documents, defining DTDs and schemas, exchanging and manipulating XML data via an RDBMS, and integrating XML technologies into Web applications will be covered. prerequisite: FMIS 2201 or MIS 2201, FMIS 3220, FMIS 3220 or MIS 3220, FMIS 3232 or FIN 3232; credit will not be granted if already received for FMIS 3230 or FMIS 4221.

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. prerequisite: FMIS 2201 or MIS 2201, LSBE candidate or non-LSBE MIS minor or college consent; credit will not be granted if already received for MIS 3220 or MIS 4223, no grad credit

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. prerequisite: FMIS 3220 or MIS 3220, FMIS 3232 or MIS 3232; credit will not be granted if already received for FMIS 4225.

MIS 4241. Data Analytics for Managerial Decision Making. (3 cr. ; A-F or Audit; Every Spring) This course introduces the basic concepts, techniques and technologies of data analytics and business intelligence, and their role in supporting high-level decision making in business. The course examines fundamental principles of descriptive, predictive and prescriptive analytics, illustrates real-world examples in different business contexts using data analytics software, and develops data-analytic thinking in specific application domains. prerequisite: MBA student or department consent.

MIS 4222. 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. prerequisite: LSBE candidacy, FMIS 2201 or MIS 2201, ECON 2030; credit will not be granted if already received for FMIS 3241 or MIS 3241; no grad credit.

MIS 5220. Medical Informatics. (3 cr. ; A-F or Audit; Every Fall) Introduction to the convergence of computing, information systems, and healthcare with a focus on managing information and developing systems that leads to more effective decisions and actions in healthcare. Covers the standards, ethics and security of the electronic health record. prerequisite: FMIS 2201 or MIS 2201, FMIS 3220, FMIS 3232 or MIS 3232; credit will not be granted if already received for FMIS 4225.

MIS 5223. 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. prerequisite: MBA student or department consent.

MIS 5225. Advanced Applications Development. (3 cr. ; A-F or Audit; 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. prerequisite: MBA student or department consent.

MIS 5241. Data Analytics for Managerial Decision Making. (3 cr. ; A-F or Audit; Every Spring) This course introduces the basic concepts, techniques and technologies of data analytics and business intelligence, and their role in supporting high-level decision making in business. The course examines fundamental principles of descriptive, predictive and prescriptive analytics, illustrates real-world examples in different business contexts using data analytics software, and develops data-analytic thinking in specific application domains. prerequisite: MBA student.

Management Studies (MGTS)

MGTS 1101. Introduction to Business. (3 cr. ; A-F or Audit; Periodic Fall & Spring) Introduction to context, environment, and operation of business and organizations. Study of foundations and functional areas of business and entrepreneurship. Analysis of technological, ethical, diversity, and global issues from business and organizational perspectives. prerequisite: COMM 1112 or 1222, PSY 1003, pre-business major.

MGTS 3301. Production and Operations Management. (3 cr. ; A-F or Audit; Every Fall, Spring & Summer) Introductory survey of production and operations as a functional area of management, including operations strategy, process design, forecasting, resource allocation, inventory management, scheduling, quality management, and project management. Computer applications of quantitative techniques to support operations decision making. prerequisite: LSBE candidate or approved non-LSBE business administration minor or college consent; credit will not be granted if already received for FMIS 3301.

MGTS 3401. Organizational Behavior and Management. (3 cr. ; A-F only; Every Fall & Spring) Introduction to organizations, management processes, and understanding human behavior at work. Covers the effects of the external environment, organizational structure, job design, teams, and leadership on employees, attitudes, motivation, and behavior. prerequisite: LSBE candidate or business administration minor or approved Organizational Management minor or college consent.

MGTS 3491. Independent Study. (1-3 cr. ; A-F only; Every Fall, Spring & Summer) For students wishing to do special work in entrepreneurship, human resource, MIS, organizational management or strategic management that extends beyond, or in greater depth than regular course offerings. prerequisite: department consent.

MGTS 3497. Organizational Management 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 pre-req: 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 human resource management, 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 experience in human resource management. 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, 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, secure approval, and submit written proposal. Prereq: 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.; 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 4301. Introduction to Human Resource Management. (3 cr.; A-F only; Every Fall; Spring & Summer) The course introduces knowledge and develops skills on how to design and manage organizational systems to achieve optimal performance. Students are exposed 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 4411. High Performance Organization Design and Transformation. (3 cr.; A-F only; Periodic Fall & Spring) 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 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 charismatic and transformational leadership? Prereq: 3401, LSBE candidate or Non-LSBE Organizational Management Minor or college consent.

MGTS 4413. Leadership Studies. (3 cr.; A-F only; Every Fall) Foundation of Sustainable Management. (3 cr.; A-F only; Periodic Fall) 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 (economic, political, social. Emphasis on external environment--economics, culture, government, technology). Prereq: 3401, 3801, 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 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. Management of Innovation and Technology. (3 cr.; A-F only; Periodic Fall) Differences in culture, history, resources, etc. are explored in 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 instructional 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 systems, which are critical skills not only for human resource managers but also general managers as well. prereq: 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, 3801 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 provides 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. prereq: 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, analogous/complimentary ventures, and investors. Students are challenged to test ideas and gain a clearer understanding of the interdisciplinarity, complexities involved within the entrepreneurial landscape. The core of 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 4 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, 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 participative leadership? What is charismatic and transformational leadership? pre-req: MBA student or instructor consent

MGTS 5463. Foundations of 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, 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 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 nonpublic 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: LSBE candidate or non-LSBE Marketing minor or approved non-LSBE business administration minor or college consent

MKTG 3710. Green Marketing. (3 cr. ; A-F or Audit; Periodic Fall, Spring & Summer) 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. pre-req: 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 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 other sales 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. pre-req: MgtS 3701 or Mkgt 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. preq: 3701, LSBE candidate or Graphic Design and Marketing majors or college consent

**MKTG 3761. Marketing Analytics I: Introduction to Marketing Metrics and Fundamental Analysis 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. pre-req: Marketing Analytics Major

**MKTG 3767. 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. pre-req: LSBE candidate, completion of at least two courses in the major and consent of internship director

**MKTG 3771. Sports Marketing.** (3 cr.; A-F or Audit; Every Fall)
This course will provide an overview of various aspects of sports marketing including: (1) the marketing of sports products (2) the use of sports to market non-sports products. pre-req: 3701, LSBE Candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major

**MKTG 3791. 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. pre-req: department consent

**MKTG 3797. 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 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, prior major coursework, consent of internship director; credit will not be granted if already received for MgtS 3797

**MKTG 4710. Marketing for Non-Profits.** (; 3 cr.; A-F or Audit; Periodic 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. pre-req: 3701

**MKTG 4712. Event Marketing.** (3 cr.; A-F or Audit; Every Spring)
This course will focus on the role of events in marketing. Students are introduced to a number of effective event marketing strategies used to reach and engage target audiences and achieve engagement, sales, lead and revenue goals. Marketing using webinars, festivals, trade shows, corporate events, conferences, non-profit fundraisers, cultural and sporting events will be explored. Specific topics will include event management and planning, selecting the “right” event partnership, branding, lead generation, sponsorship, social media, virtual reality, engaging event experiences, touch points and various ways to measure ROI. Insights into consumer experiences, such as how experiences are remembered and ways experienced based marketing may contribute to value are also explored. pre-req: MKTG 3701, LSBE candidate or Graphic Design Marketing sub plan major or non-LSBE Marketing Minor or college consent; no grad credit

**MKTG 4721. Advertising and Marketing Communications.** (3 cr.: A-F only; Every 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. pre-req: MgtS 3701 or Mkgt 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 4731. 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. pre-req: MktS 3701 or Mkgt 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 4741. 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. pre-req: MGTs 3701 or MKTG 3701, LSBE candidate or Graphic Design and Marketing majors or Graphic Design with Marketing sub plan major or college consent

**MKTG 4742. Advanced Professional Selling.** (3 cr.: A-F or Audit; Periodic Spring)
Introduces advanced topics and skill development in professional selling. Emphasis on interpersonal communications, relationship management, team selling, personal productivity, and negotiations. pre-req: MKTG 3741, LSBE candidate or Graphic Design with Marketing subplan or non-LSBE Marketing minor or college consent

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
MKTG 4751. Retailing. (3 cr.; A-F only; Periodic Fall & Spring) Principles of establishing and operating a retail business. Topics include 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: MTG 3701, LSBE candidate or Graphic Design and Marketing majors or college consent

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. prereq: MTG 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. prereq: 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. 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; 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. prereq: MGTS 3701 or MKTG 3701, MGTS 3711, 11 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 to be Assigned). (; 3 cr. [max 27 cr.]; A-F only; Periodic Fall & Spring) Enables students, working closely with the instructional faculty, to explore one or more contemporary marketing issues in substantial depth. prereq: 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 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 utilize 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. pre-req: MBA student or department consent

MKTG 5721. Advertising and Marketing Communications. (3 cr.; A-F or Audit; Every 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. pre-req: MBA student or department consent

MKTG 5731. Consumer Behavior. (3 cr.; A-F or Audit; 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, pre-req: 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. pre-req: 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. prereq: 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. prereq: 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 politics associated with indigenous governments. We will examine North American indigenous governance from pre-colonial times to the present, focusing on both the evolution and alteration of these governments as well as the difficult political decisions indigenous peoples faced when confronted by the colonizing forces of European states, the U.S., and individual states, and the modifications developed by indigenous nations in their efforts to retain and exercise their sovereign powers. prereq; 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 national level and pays close attention to the political, legal, and economics relationships that have developed between Native nations, state governments, county governments, and municipal entities. prereq: 5110 or instructor consent

MTAG 5210. Administration Governance (MTAG)
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 interrelate 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 leadership and ethics. 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 define 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 examines 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 relationship, examining the views and attitudes of policy-makers and gauging the reactions of Indigenous nations to those policies. prereq: MTAG 5320, 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 5597. 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

**Mathematics (MATH)**

**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 is required in all prerequisite courses

**MATH 1024. Introduction to Contemporary Mathematics.** (LOGIC & QR; 3 cr.; A-F or Audit; Every Fall, Spring & Summer)
Students in mathematics, engineering, or computational software. Not intended for modeling in earth and life sciences.


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 ACT 18/SAT 480 or a grade of C or higher in Math 103; credit will not be granted if already received for Math 1141.

Mathematics for Elementary Education II. (3 cr.; A-F or Audit; Every Spring)
Part two of subject matter for effective elementary school teaching. Properties of geometric figures, probability, statistics. Pre-req: Math 1140

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. Pre-req: 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.

Introduction to Game Theory. (LOGIC & QR; 4 cr.; A-F or Audit; Every Fall)
Game Theory is the study of strategic decision making in 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. Pre-req: Math 1005 or Math ACT 24 or higher

Precalculus Analysis. (LOGIC & QR; 4 cr.; A-F or Audit; Every Fall & Spring)
This course introduces the concepts of analytical geometry, relations, functions, and graphs. It involves exponential and logarithmic, and trigonometric functions as well as conic sections, sequences and series, and systems of linear equations. Pre-req: Math ACT 24 or higher or a grade of at least C in Math 1005 or department consent

Calculus for the Natural Sciences. (LOGIC & QR; 5 cr.; A-F or Audit; Every Fall & Spring)
Differential and integral calculus needed for modeling in earth and life sciences. Computational software. Not intended for students in mathematics, engineering, or physical sciences. Pre-req: Math ACT 27 or higher or a grade of at least C in Math 1250 or department consent

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. Pre-req: Math ACT 27 or higher or a grade of at least C in Math 1250 or department consent

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. Pre-req: A grade of at least C- in 1290 or 1296 or 1596

Independent Study. (1-3 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. Pre-req: department consent

Internship. (1-3 cr.; S-N or Audit; Every Fall, Spring & Summer)
Practical, independent project in commercial, governmental, or industrial setting. Department approval required before beginning project. Pre-req: Math major, department consent

Mathematical Theory of Interest. (3 cr.; A-F or Audit; Every Spring)
Introduction to quantitative applications of interest and 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

Mathematical Theory of Interest. (3 cr.; A-F or Audit; Every Spring)
Introduction to quantitative applications of interest and 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

Foundations of Mathematics and Geometry. (4 cr.; A-F or Audit; Every Spring)
Introduction to foundations of mathematics. Non-Euclidean geometries, postulational systems, and models. History of mathematics. Importance and use of mathematics in modern society. Pre-req: 1290 or 1296 or 1596, teaching math major, a grade of C- or better in is required in all prerequisite courses

Mathematics Tutorial Project. (1-2 cr.; Max 4 cr.; S-N or Audit; Every Fall, Spring & Summer)
Primarily for tutoring in math courses, under supervision of mathematics department member. Pre-req: 1290 or 1296 or 1596, SSP 3003, instructor consent, a grade of C- or better in is required in all prerequisite courses

Differential Equations with Linear Algebra. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
First, second, and higher order equations; series methods; Laplace transforms; systems; software; modeling applications; introduction to vectors; matrix algebra, eigenvalues. Pre-req: A grade of at least C- in 1297 or 1597

Calculus III. (4 cr.; A-F or Audit; Every Fall, Spring & Summer)
Third part of a standard introduction to calculus. Conic sections, vectors and vector-valued functions, partial derivatives and multiple integrals, vector fields, Green's and Stokes' theorems. Pre-req: A grade of at least C- in 1297 or 1597

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. Pre-req: 1296 with a grade of C- or better

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. Pre-req: 1297 or 1597 or instructor consent, a grade of C- or better in is required in all prerequisite courses

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. Pre-req: previous or concurrent registration in 3280

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. Pre-req: Math major or minor, department consent; must register during semester of 16th point

Special Topics: (Various Titles to be Assigned). (1-3 cr.; Max 6 cr.; A-F or Audit;)
Topics not available in standard curriculum.

Special Topics: (Various Titles to be assigned). (1-5 cr.; Max 10 cr.; S-N or Audit; Periodic Fall, Spring & Summer)
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 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 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. prereq: 3280, 3355, a grade of C- or better 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. prereq: 3280 with a grade of C- or better

MATH 4240. Applied Mathematics: Functional Analysis. (3 cr.; A-F or Audit; Every Spring)
Fundamentals of differential equations, existence, uniqueness, continuation of solutions and boundary-value problems; orthogonal polynomials; Fourier series and transforms; Sturm-Liouville operator; Laplace transform; Fourier series, integrals, transforms for convergence, rearrangements, summability, and the class L-SQUARED. prereq: A grade of C- or better is required and a grade of B- or better is recommended; no grad credit

MATH 4250. Partial Differential Equations. (3 cr.; A-F or Audit; Fall Odd Year)
Introduction to partial differential equations, emphasizing use of Fourier series, Green's functions, and other classical techniques. prereq: A grade of at least C- in 3280 and 3298 or grad standing

MATH 5270. Linear Programming. (3 cr.; A-F or Audit; Spring Odd Year)
Finite graphs, including trees, connectivity, traversability, planarity, colorability, labeling, and matchings. prereq: 3355 with a grade of C- or better or instructor consent

MATH 5280. Partial Differential Equations. (3 cr.; A-F or Audit; Fall Even Year)
Introduction to partial differential equations, emphasizing use of Fourier series, Green's functions, and other classical techniques. prereq: A grade of at least C- in 3280 and 3298 or grad standing

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. prereq: MATH 3355, CS 1xxx or above, STAT 3411 or 3611

MATH 5240. 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. prereq: 3280 with a grade of C- or better

MATH 5250. 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. prereq: A grade of C- or better is required and a grade of B- or better is recommended; no grad credit

MATH 5251. Dynamical Systems. (3 cr.; A-F or Audit; Every Fall)
Introduction to dynamical systems. Emphasizing use of Fourier series, Green's functions, and other classical techniques. prereq: A grade of at least C- in 3280 and 3298 or grad standing

MATH 5300. 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. prereq: 3355 with a grade of C- or better or instructor consent

MATH 5327. Advanced Linear Algebra. (3 cr.; A-F or Audit; Every Summer)
Application and analysis of continuous and discrete dynamical systems. Model construction, simulation, and interpretation. prereq: 3280 with a grade of C- or better

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. prereq: grade of C- or better in MATH 3355 or MATH 3326 and CS 3512 or grad student

MATH 5365. Graph Theory. (3 cr.; A-F or Audit; Every Fall)
Finite graphs, including trees, connectivity, traversability, planarity, colorability, labeling, and matchings. prereq: 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. prereq: 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. prereq: 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. prereq: 5371 with a grade of C- or better or instructor consent

MATH 5810. Linear Programming. (3 cr.; A-F or Audit; Spring Odd Year)
Linear Programming.
Motivation problems, modeling, theory of simplex method, duality and sensitivity analysis, large-scale problems, complexity, and Karmarkar algorithm. prereq: 3280 or 4326f with a grade of C- or better

MATH 5830. Numerical Analysis: Approximation and Quadrature. (4 cr.; Student Option; Every Fall)
Error analysis, interpolation and approximation, numerical integration, solution of nonlinear systems. prereq: 3280 or 4326 with a grade of C- or better, proficiency in FORTRAN or C or C++

MATH 5840. Numerical Analysis: Systems and Optimization. (4 cr.; Student Option; Spring Even Year)
Solution of systems of linear equations; elimination and factorization methods; iterative methods; error analysis; eigenvalue/eigenvector approximation; unconstrained optimization; nonlinear least squares. prereq: 3280 or 4326 with a grade of C- or better, proficiency in FORTRAN or C or C++

MATH 5991. Independent Study. (1-4 cr.; A-F or Audit; Spring Odd Year)
Directed individual reading and/or research in mathematics; must be arranged with instructor and department head before registration. prereq: department consent; Maximum 6 credits to a grad program.

Mechanical Engineering (ME)

ME 2105. Introduction to Material Science for Engineers. (3 cr.; A-F or Audit; Every Fall & Spring)
Structures and properties of engineering materials, emphasizing metals, composites, polymers, and ceramics. prereq: Chem 1151 or 1153 and 1154; credit will not be granted if previously given for Engr 2110 or IE 2105.

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. Carnot systems, work producing systems, combustion engine cycles, work absorbing systems, refrigeration cycles, psychrometrics. prereq: PHYS 2013; credit will not be granted if already received for ME 3211

ME 2226. Dynamics. (3 cr.; A-F or Audit; Every Fall & Spring)
Review of particle dynamics. Mechancial systems and regid-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 Summer)
Machining theory and laboratory work using mill, 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 2221 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 1411 or 1511 or 2121, EE 2006, Math 3280, BSME or BS IE 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 Mechatronics. (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. In this course, students will be introduced to 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. Throughout this course, student will acquire both hardware and software development experiences on vision-based robot control, which could be directly applied to their future engineering career or advanced academic pursuance. prereq: CS 1511, Math 3280, ME 3140 or equivalent; no grad credit

ME 4112. 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 the design of heat and mass transfer equipment and systems. prereq: 3111, Math 3286, BSME or BSChE candidate or instructor consent

ME 4122. Heat Transfer, Thermodynamics and Fluid Mechanics Laboratory. (2 cr.; A-F or Audit; Every Fall & Spring)
Heat transfer and Thermo-Fluids lab, experimental evaluation of conductive, convective and radiation heat transfer, and analysis of performance of various energy systems such as compressors, turbines, fans, refrigerators and combustion engines. prereq: Must be taken after or concurrently with ME 4112 or ChE 3112 or instructor consent, BSME candidate

ME 4135. Robotics and Controls. (3 cr.; A-F or Audit; Periodic Fall)
Exploration of Forward and Inverse Kinematics models for individual robots. Study of robot motion trajectories at the micro- and macroscale level. Study of PE, PD and PID controllers for robots. Exploration of efficient methods for developing stable controllers for various geometric configurations. prereq: ME 3140, 3230, ENGR 2026 or ME 2226, BSME or BSIE or BSEP candidate or instructor consent

ME 4145. CAD/CAM. (4 cr.; A-F or Audit; Every Fall & Spring)
Description of hardware for CAD/CAM, principles of solid modeling, data structures, visualization, calculation of mass properties, 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. prereq: IE 1225 or Engr 1222. Engr 2016 or CE 2017, BSME or BSIE 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. prereq: 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. prereq: 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. prereq: EMT4110 and (ME4112 & ME3230) or (ME4112 & ME4175) or (ME3230 & ME4175) or instructor consent, no grad credit

ME 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 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. Requires more than 15 hours per week of company work. pre-req: Upper division, instructor consent, no grad credit

ME 4365. Global Sustainability Experience in Design/Manufacturing in Africa. (3 cr.; A-F or Audit; Every Summer) Sustainability within the manufacturing and design context will be taught and explored. As we live in a global economy, this course exposes students to some of the leaders in sustainability, alternative businesses, and manufacturing methods, reinforced by visits to local manufacturing facilities, art centers, museums, and historical villages in Ghana. Cultural activities including: cultural dance, keyboarding, textile dyeing, and basketeering are also integrated into the experience. Students will design and manufacture products, such as a bicycle or water faucet, using local environmentally friendly materials like bamboo. An Eco-tool audit software is used to analyze and select material and manufacturing processes that are in line with the low environmental impact and are energy efficient. prereq: 2105, IE 3130

ME 4375. Pipeline Engineering. (3 cr.; A-F or Audit; Periodic Spring) Overview of basic elements of pipeline transportation. Multi-disciplined introduction to concepts and methods of Pipeline Engineering. Topics include Mechanical, Electrical and Geotechnical Design, Hydraulics, Route Selection, Materials Selection, Construction, Operation and Maintenance. prereq: ME 3111 or CH 3111 or CE 3221

ME 4491. Independent Study in Mechanical 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: Senior standing in engineering discipline, instructor consent

ME 4495. Special Topics: (Various Titles to be Assigned). (1-4 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer) Topics not available in regular department curriculum. May involve specialties of department or visiting faculty. prereq: BSME candidate or instructor consent, no grad credit

ME 5050. Fundamentals of Nuclear Engineering. (3 cr.; A-F or Audit; Every Fall) 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. A discussion of radiation types and safety. pre-req: BSME graduate student or instructor consent

ME 5060. Machine Vision and Image Based Robot Control. (3 cr.; A-F or Audit; Every Fall) 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 seroing, which could be directly applied to their future engineering career or advanced academic pursuance. prereq: 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 controller 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/convection, 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 Caigliano'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 major with B or better in MATH 3280 and MATH 3298 and ENGR 2016 or CE 2017; or graduate student or instructor consent

ME 5305. Computational Fluid Dynamics. (3 cr.; A-F only; Spring Even Year) Finite-difference methods for steady and transient diffusion and convection-diffusion problems. Finite-volume method for the solution of multi-dimensional fluid flow, and heat and mass transfer problems. Utilize CFD software to solve complex problems. prereq: 4112 (concurrent registration allowed) or CH 3112, BSChE, or BSME or BSIE candidate or instructor consent

ME 5315. Nondestructive Evaluation of Engineering Materials. (3 cr.; A-F only; Periodic Fall) Fundamentals of Ultrasonic and Acoustic Emission NDE are considered including wave propagation, experimental measurement systems, flaw detection and characterization.
and material characterization. Labs are used to support the study of ultrasonic and acoustic emission NDE. Other NDE techniques including magnetics, penetrants, eddy currents, thermography, are surveyed. prereq: 3140

ME 5325. Sustainable Energy System. (3 cr.; A-F only; Spring Odd Year)
A comparison of different energy systems will be made in terms of economic, environmental and political implications. Specific energy alternatives will include coal, oil, geothermal, bioenergy, solar, wind, fusion, hydrogen, fuel cell, prereq: 3211, BSEC or BSEE or BSIE or BSME candidate, and instructor consent

ME 5335. Introduction to Finite Element Analysis. (3 cr.; A-F only; Fall Even Year)
An introduction to finite element analysis, including theoretical and applied components in mechanical and thermal systems. prereq: BSME or BSIE or MSEM candidate or instructor consent

ME 5345. Smart Materials and Structures. (; 3 cr.; A-F or Aud; Spring Even Year)
Introduction to smart materials and structures, such as piezoelectric materials, shape memory alloys, magnetostrictive materials, adaptive structures, and active vibration control systems. The course will cover their material properties, modeling methods, and engineering applications in sensors, actuators, energy harvesting, and biomedical devices. prereq: 3140, 3222

ME 5355. Gas Turbines. (3 cr.; A-F or Aud; Fall Even Year)
Gas turbine cycles, regenerations, recuperation, reheate, intercooling, combined cycle plants, and thermochemical regeneration. Axial and radial flow compressors and turbines; combustor designs, energy analysis, emissions, and noise. Turboket, fanjet, turboprop engine performance. Stationary power plants. prereq: 3111, 3211 and BSME or MEng or MSEM or instructor consent

ME 5365. Introduction to Medical Device Development. (3 cr.; A-F or Aud; Spring Odd Year)
This course will cover the concepts related to the development of medical devices including biocompatibility of materials, prototyping medical devices, identifying unmet clinical needs, regulatory requirements, intellectual property protection, and reimbursement. Throughout the term of the semester students will apply these concepts to a project where they will develop a medical device concept to address an unmet clinical need. pre-req: ME 2105, BSME or BSIE upper division or MSEM or MSME candidate, or instructor consent

ME 5991. Independent Study in Mechanical Engineering. (1-4 cr. [max 6 cr.]; Student Option; Periodic 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

Medicine (MED)

MED 5085. Medical Research Ethics, Responsible Conduct of Research. (1 cr.; S-N only; Every Fall)
Designed for postdoctoral fellows and graduate and undergraduate students to define and investigate ethical behavior in research. The potential pitfalls encountered when doing medical research also will be emphasized. Topics include morality and ethics; rationale for training in responsible conduct of research; definition of research misconduct; fabrication and falsification; conflict of interest; financial misconduct; authorship; grant writing; peer review; mentorship; animal research issues; human research issues; technology transfer; gender/race issues; and whistleblowing pre-req: instructor consent

Museum Studies (MST)

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 hundred years ago. Accessibility, learning styles, and the social responsibility of museums are among the topics included. prereq: MST 1100

Music (MU)

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. (; 2 cr. [max 4 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, transposition, 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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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 & QR; 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 1123. 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 week 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 arranged 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 major 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 arranged 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)
Individual bassoon 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 bassoon lesson weekly plus arranged 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 arranged 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 arranged 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 arranged group lesson. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1366. Oboe - Non-Majors. (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 1367. Oboe - Major. (2-3 cr. [max 18 cr.]; A-F or Audit; Every Fall, Spring & Summer)
Individual oboe lesson weekly plus arranged group lesson. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1368. Bassoon - Non-Majors. (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 arranged 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 arranged 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 arranged 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 arranged 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 arranged group lesson. prereq: Music major; performance majors register for 3 cr., all other 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 arranged 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 one hour plus arranged 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 weekly plus arranged group lessons. prereq: 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 arranged 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 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 arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

MU 1396. Jazz Guitar - Non-Major. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall, Spring & Summer) Individual lesson one hour weekly. prereq: Non-music major or music major secondary instrument

MU 1398. Pop Styles Guitar- Non Major. (1 cr. [max 12 cr.]; A-F only; Every Fall, Spring & Summer) Individual lesson one hour weekly. prereq: Non-music major or music major secondary instrument

MU 1411. Diction: Italian and English. (1 cr.; A-F or Audit; Every Fall) Proper enunciation of English and Italian as applied to vocal literature. prereq: Principal instrument voice or instructor consent

MU 1412. Diction: German. (1 cr.; A-F or Audit; Spring Even Year) Proper enunciation of German as applied to vocal literature. prereq: 1411 or instructor consent

MU 1413. Diction: French. (1 cr.; A-F or Audit; Spring Odd Year) Proper enunciation of French as applied to vocal literature. prereq: 1411 or instructor consent

MU 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, transcription, 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

MU 1422. Piano Class II. (1 cr.; A-F or Audit; Every Spring) This course focuses on keyboard musicianship is the second of a two-semester sequence of class piano. It is a continuation of MU 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: MU 1421, equivalent CE or instructor consent

MU 1423. Piano Class III. (1 cr.; A-F or Audit; Every Fall & Spring) This is a continuation course to Piano Class II/II (MU 1421/1422). Included in the course are studies in basic keyboard skills (scales/arpeggios/chords/progressions), harmonization, transcription, sight-reading, accompanying, repertoire, and score-reading. pre-req: Music major and passing grades in MU 1421 and 1422 or by instructor consent following proficiency/placement exam.

MU 1424. Piano Class IV. (1 cr.; A-F or Audit; Every Fall & Spring) This is a continuation course to Piano Class I/I/II (MU 1421/1422/1423). Included in the course are studies in basic keyboard skills (scales/arpeggios/chords/progressions), harmonization, transcription, sight-reading, accompanying, repertoire, and score-reading. pre-req: Music major and passing grades in MU 1421, 1422 and 1423 or by instructor consent following proficiency/placement exam.

MU 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

MU 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

MU 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

MU 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

MU 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

MU 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

MU 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

MU 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

MU 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

MU 1511. University Singers. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
An auditioned chorus performing music from a wide spectrum of historical periods, cultures, and languages. Open by audition to all university students. pre-req: Audition and instructor consent

MU 1512. Chamber Singers. (FINE ARTS; 1 cr. [max 12 cr.]; Student Option; Every Fall & Spring)
A choir performing vocal chamber music and music for smaller ensembles. pre-req: concurrent registration in 1511 or 4511; instructor consent

MU 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

MU 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 MU 1515 and 4515

MU 1541. 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 determines placement

MU 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.

MU 2003. Survey of American Music. (FINE ARTS, DIVERSITY; 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.

MU 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.

MU 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: 1122 or 1122

MU 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

MU 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

MU 2112. Ear-Training III. (1 cr.; A-F only; Every Fall)
Continued study of ear-training and sight-singing of tonal music. prereq: 1122

MU 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 century and contemporary modes of musical organization. prereq: 2111

MU 2122. Ear-Training, Sight Singing and Improvisation. (1 cr.; A-F only; 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 2447. Brass Techniques. (1 cr.; A-F or Audit; Every Spring)
Beginning group instruction of pedagogy, technique and tone production principles on brass 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

Courses listed in this catalog are current as of 2019-08-29. For up to-date information, visit www.catalogs.umn.edu.
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 ISEE 1010; credit will not be granted if already received for MU 1601 and 3601

MU 3606. Field Experience: Classroom Music Pre K-8. (1 cr.; A-F or Audit; Every Fall) Observations and micro-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 instrumental music education, recruiting, scheduling, administrative tasks, literature, organizing and training athletic bands. prereq: music major or instructor consent

MU 3608. Teaching Elementary Music I. (3 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 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) Fundamental conducting, choral techniques, communication skills, and repertoire related to teaching and directing choral ensembles. prereq: MU 2121 or instructor consent

MU 3702. Choral Conducting and Methods II. (3 cr.; A-F or Audit; Every Spring) Continuation of MU 3701, emphasizing choral conducting techniques, organization, rehearsal planning, repertoire, style, and pedagogy for choral ensembles. prereq: MU 3701

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: 2121 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.

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 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; 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) Individual lesson weekly plus arranged group lessons. prereq: Music major; performance majors register for 3 cr., all others register for 2 cr.

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) 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) 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 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 or 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 or 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 or 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 or Audit; Every Fall & Spring) Individual bassoon lesson weekly plus arranged group lessons. 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 or 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 or 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 or Audit; Every Fall & Spring) Individual trombone lesson weekly plus arranged group lessons. 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 or 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 or 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 or 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 or 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 or 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 or 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 or Audit; Every Fall & Spring) Individual lesson one half hour weekly. prereq: Non-music major or music major secondary instrument

MU 4391. 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.
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: Major music; 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 or Audit; Every Fall, Spring & Summer) 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 or Audit; Every Fall & Spring) Study and performance of transcribed and original concert literature. prereq: Instructor determines placement

MU 4502. Symphonic Wind Ensemble. (; 1 cr. [max 6 cr.]; A-F or 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 or 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 or 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 or 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 or Audit; Every Fall & Spring) Study and performance of choral literature from various periods and cultures. prereq: Instructor determines placement

MU 4511. University Singers. (1 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) An auditioned chorus performing music from a wide spectrum of historical periods, cultures, and languages. Open by audition to all university students. pre-req: Audition and instructor consent

MU 4512. Chamber Singers. (1 cr. [max 6 cr.]; A-F or Audit; Every Fall & Spring) A choir performing vocal chamber music and music for smaller ensembles. pre-req: concurrent registration in 1511 or 4511; instructor consent

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 4514. Vocal Jazz Ensemble. (1 cr. [max 12 cr.]; A-F or Audit; Every Fall & Spring) 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 students. 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 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 study of the opera singer. pre-req: Music major with emphasis on student's major applied area. Focus varies by semester. prereq: Grad student or instructor consent

MU 4601. Applied Music Teaching. (1 cr. [max 2 cr.]; A-F or Audit; Every Fall & Spring) Examination of exceptionality in classroom music for pre-service music education majors. Topics include adaptive instructional strategies, characteristics of students, special methods in music education, and differentiated instruction. pre-req: MU 2605 and instructor consent

MU 4606. Special and Adaptive Methods in Music Education. (CDIVERSITY; 3 cr.; A-F or Audit; Every Spring) Examination of exceptionality in classroom music for pre-service music education majors. Topics include adaptive instructional strategies, characteristics of students, special methods in music education, and differentiated instruction. pre-req: MU 2605 and instructor consent

MU 4610. Piano Pedagogy and Practicum I. (1 cr.; A-F or Audit; Fall Odd Year) Principles and materials for teaching elementary piano students; supervised practice teaching. prereq: Music major or instructor consent

MU 4621. Piano Pedagogy and Practicum I. (2 cr.; A-F or Audit; Fall Odd Year) Principles and materials for teaching intermediate piano students; supervised practice teaching. prereq: Mu 4621 or instructor consent

MU 4622. Piano Pedagogy and Practicum II. (2 cr.; A-F or Audit; Spring Even Year) Principles and materials for teaching advanced piano literature. prereq: 1321 or instructor consent

MU 4623. Piano Techniques and Style. (3 cr.; A-F or Audit; Fall Even Year) Technical and stylistic considerations for teaching and performing advanced piano literature. prereq: 1321 or instructor consent

MU 4803. Jazz Pedagogy. (2 cr.; A-F or Audit; Fall Odd Year) Techniques and materials necessary to organize and develop a jazz band in junior and senior high school. prereq: Mu [2121, 2122]

MU 4807. Music Industry. (2 cr.; A-F or Audit; Spring Even Year) Study of developing commercial applications and trends in the music industry, including basic concepts of business and marketing. prereq: instructor consent

MU 4997. Internship in Music. (1-2 cr.; A-F or Audit; Every Fall & Spring) Participation in music tutoring or recognized campus/community activity related to student's musical program and career objectives. prereq: department consent

MU 5005. African Roots of American Music. (3 cr.; A-F or Audit; Every Spring) Study of representative choral literature from traditional African music and culture and their influences on American musical styles. prereq: 60 cr or instructor consent

MU 5201. Advanced Music History. (2 cr.; A-F or Audit; Every Fall) Specialized study of selected composers and/or genres. prereq: 3201, 3202 or instructor consent

MU 5203. Advanced Choral Literature. (2 cr.; A-F or Audit; Periodic Fall & Spring) Study of major works for large wind and/or orchestral ensembles. prereq: Grad Student or instructor consent

MU 5204. Instrumental Ensemble Literature. (2 cr.; A-F or Audit; Periodic Fall & Spring) Study of major works for large wind and/or orchestral ensembles. prereq: Grad Student or instructor consent

MU 5205. Instrumental Solo Literature. (1 cr. [max 3 cr.]; A-F or Audit; Periodic Fall & Spring) Survey of instrumental solo literature within the student's applied field of study. prereq: Grad student or instructor consent

MU 5206. Vocal Solo Literature. (1-2 cr.; A-F or Audit; Periodic Fall & Spring) A historical survey of standard repertoire for solo voice in art song, opera, and oratorio; focus varies by semester. prereq: Grad student or instructor consent

MU 5207. Instrumental Chamber Music Literature. (1 cr.; A-F or Audit; Periodic Fall & Spring) 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 5210. The Professional Singer: Entrepreneurship for Opera Singers. (1 cr.; A-F or Audit; Periodic Fall & Spring) The study and application of audition skills for the opera singer. pre-req: Music major with concurrent registration in MU 4311 or 8301 and 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:
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 5627

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 granted if already received for MU 5628

MU 5695. Special Topics: (Various Titles to be Assigned). (1-3 cr. [max 27 cr.]; A-F or Audit; Periodic Fall, Spring & Summer)
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. [max 9 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 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

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.

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: 3100, 3201, 3202, 3203, Math 1141 (concurrent registration allowed), admission to Ojibwe elem/middle school program

OJED 4200. Ojibwe Language Methods. (4 cr.; A-F only; Periodic Spring)
Methods for teaching Ojibwe, an endangered, indigenous language. Curriculum development to support learning; 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, laws 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: Naadamaadwin 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 this 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 Summer 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 at your own pace, you will also learn to identify and articulate a variety of medical conditions and procedures. Communication related to disease states, procedures, and diagnostics in health care can sometimes seem like another language. This will help you recognize 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 healthcare 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 that 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 the 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 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 healthcare 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. Prereq: Prior completion or concurrent enrollment in 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 healthcare 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. 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. Prereq: Medical terminology recommended.

PHAR 4204. 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 U.S. and what their rights are as a citizen-participant during the healthcare debate. Students are expected to have completed the first-year writing requirement (https://cla.umn.edu/writing-studies/first-year-writing), or equivalent, prior to registering for this class. This is a completely online course with weekly due dates. 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 and Spring term. For more information, contact phar4204@umn.edu or 612-624-7976.

PHAR 4293. Directed Research I for Undergraduates. (1-5 cr.; Student Option; Every Fall, Spring & Summer) Students work with College of Pharmacy faculty. Prereq: undergrad, instructor consent

PHAR 4294. Directed Study I for Undergraduates. (1-5 cr.; [max 10 cr.]; Student Option; Every Fall, Spring & Summer) Individualized study. Students work with faculty on special projects. Prereq: undergrad, instructor consent

PHAR 5100. Pro-Seminar. (1 cr.; A-F only; Every Fall) History, foundational frameworks, and key research domains for social and administrative pharmacy through examination of landmark literature. Students think critically, reflect on important works, and create a cognitive map of the discipline and their own focus for study.

PHAR 5201. 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 articulately 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. Prereq: Basic knowledge of human anatomy/physiology

PHAR 5204. 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. health care system. This course will expose students to current controversial issues surrounding medications and national health care 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 health care. During this course, students will understand how their choices, ethics and behavior affect societal decisions surrounding the availability of medications in the U.S. 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 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. Prereq: 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 Spring) Regulatory issues encountered in conducting drug research trials. Performing different aspects of clinical trials. Lectures, readings, small group discussions, homework assignments, prereq: 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 5510. 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 phar5700@umn.edu or 612-624-7976. Prereq: Medical terminology recommended

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.

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, Hertziefeld, Jarmusch, Kafka, Kierkegaard, Malick, and Sartre will be analyzed.
PHIL 3025. Philosophy of Race and Racism. (4 cr.; A-F or Audit; Periodic Fall & 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 should we approach questions about racism? It will examine various metaphysical positions that have been offered to explain race - realist, constructivist, relativist, and nihilist - and the moral/political ramifications of each of these types of theories. prereq: minimum 30 credits or instructor consent

PHIL 3195. Special Topics: (Various Titles to be Assigned). (3 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, legal 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 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 ideas 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 ideas 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 3570. Psychology of Philosophy. (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 3575. Philosophy and Cognitive Science. (3 cr.; A-F or Audit; Spring Odd Year)
This course will explore various topics at the intersection of Philosophy and Cognitive Science. In some cases, these topics may be about how various theories and ideas from Philosophy have influenced work in the Cognitive Science. For instance, certain ideas about the nature and limits of computation from Philosophical Logic lay down the theoretical foundations for treating the mind as a type of computer, while various influential Philosophical arguments against computational models of the mind continue to shape the discussion of topics such as consciousness and rationality. In other cases, topics explored in the class may be about how various theories and experimental results from Cognitive Science have influenced Philosophical theorizing. (For instance, certain experimental results from neuroscience have called into question that claim that we free will and recent evidence from both neuroimaging and developmental psychology have influenced Philosophical work being done on the nature of morality.) pr-req: 1025

PHIL 3655. 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

PHIL 3900. 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
Physical Education (PE)

**PE 1220. Technical Swimming.** (1 cr.; Student Option; Every Fall & Spring)
This is an advanced competitive stroke class tailored to improve each student's technical swimming skills, fitness level, and kinesthetic knowledge. All competitive skills will be integrated into a weekly training schedule. An advanced skill level of swimming is recommended. The course is not intended for non-swimmers.

**PE 1300. Ballroom Dance.** (1 cr.; Student Option; Every Fall & Spring)
Development of the basic steps and patterns for ballroom dance. Development of technical and choreographic skill for personal expressive communication through movement.

**PE 1402. Tennis.** (1 cr.; Student Option; Every Fall & Spring)
Development of personal skills in tennis. Understanding of strategies and concepts for participation in the game.

**PE 1414. Bowling.** (1 cr.; Student Option; Every Fall & Spring)
Development of personal skills in bowling. Understanding of concepts and strategies for participation in the game.

**PE 1500. Cross-Country Skiing.** (1 cr.; Student Option; Every Spring)
Development of personal skills in cross-country skiing. Understanding of the techniques and concepts for participation in the sport.

**PE 1502. Alpine Skiing.** (1 cr.; A-F or Audit; Every Spring)
Development of personal skills in alpine skiing. Understanding of the techniques and concepts for participation in the sport.

**PE 1507. Introduction to River Kayaking.** (1 cr.; Student Option; Every Fall & Spring)
River kayaking techniques. History, safety, kayak design, basic braces, paddle strokes, and maneuvering for river conditions.

**PE 1508. Flatwater Canoeing.** (1 cr.; Student Option; Every Fall)
Basic skills and terminology relevant for safe canoeing on flatwater and slow-stream conditions.

**PE 1511. Sea Kayaking.** (1 cr.; A-F or Audit; Every Fall)
Sea kayaking techniques; history, safety, kayak design, basic braces, paddle strokes, and maneuvering in large water conditions.

**PE 1512. Fishing Skills.** (1 cr.; Student Option; Every Fall)
Development of personal skills in fishing. Acquisition of understanding, techniques, and patterns for participation in the activity.

**PE 1530. Rock Climbing.** (1 cr.; Student Option; Every Fall & Spring)
History, techniques and safety, equipment, knots, basic belay systems, route finding, face and crack climbing, identification of environmental hazards.

**PE 1531. Intermediate Rock Climbing.** (1 cr.; Student Option; Periodic Spring)
Intermediate rock climbing skills and knowledge including use of and placement of anchor systems, top rope set-up, introductory lead climbing and climb site risk management. This course builds upon basic rock climbing skills and techniques which are prerequisite for this course. Prereq: PE 1530 or instructor consent

**PE 1600. Physical Fitness.** (1 cr.; Student Option; Every Fall)
Development of personal skills related to physical fitness. Understanding and application of factors and participation patterns contributing to enhanced physical fitness.

**PE 1601. Aerobics.** (1 cr.; Student Option; Every Fall & Spring)
Knowledge of cardiovascular fitness, including aerobic exercise and hydro-aerobics. Physical development through cardiovascular training, muscle strengthening, and stretching.

**PE 1614. Self Defense.** (1 cr.; Student Option; Every Spring)
Development of personal skills related to self defense. Understanding of concepts, strategies, and skills for developing a personal system of self defense.

**PE 1615. Jujutsu.** (1 cr.; A-F or Audit; Every Fall, Spring & Summer)
Students will learn practical self-defense skills framed within traditional Japanese jujutsu. Jujutsu is a complete martial art, derived from the unarmed combat style of Japanese Samurai. It includes grappling, throwing, striking, and a mind-body relationship that develops confidence and perfection of character. Students will develop physical skills as well as an understanding and appreciation for the history and culture that produced jujutsu. Students will also learn how to teach kinesthetic skills to other students.

**PE 1616. Weight Training.** (1 cr.; Student Option; Every Fall & Spring)
Development of personal skills related to weight training. Understanding of principles, concepts, and conditioning regimens for participation in weight training.

**PE 1702. Soccer.** (1 cr.; A-F or Audit; Every Fall & Spring)
Development of personal skills in soccer. Understanding of strategies, concepts, and skills for participation in the sport of soccer.

**PE 1705. Lifeguarding Today.** (2 cr.; A-F or Audit; Every Fall & Spring)
Provides knowledge and skills necessary to qualify as a non-surf lifeguard. Meets current American Red Cross standards. Includes CPR and first aid instruction. Prereq: Ability to swim 500 yards, instructor consent

**PE 2240. Water Safety Instructor.** (2 cr.; A-F or Audit; Every Fall & Spring)
Knowledge, skills, and strategies to teach American Red Cross swimming and water safety courses. Prereq: 1240, 17 yrs old, knowledge and skill based on Emergency Water Safety Standard
Physical Education Teacher (PETE)

PETE 1000. Introduction and Foundations of Physical Education. (4 cr.; A-F or Audit; Every Fall) Introduction on the profession of teaching physical education. Presents professional standards for practitioners and outcomes for K-12 physical education programs. Addresses the history, philosophy, and psycho-social basis of physical education with additional context focuses upon the scientific foundations supporting the discipline. prereq: Pre-PETE major or instructor consent

PETE 1001. Teaching Games and Activities. (2 cr.; A-F or Audit; Every Fall) Addresses basic skill progressions; teaching strategies; skill development; and analysis for teaching manipulative skills, games, and activities. In addition, emphasis will be placed upon student development of personal competence in the activity. prereq: Pre PE major

PETE 1002. Teaching Team Sport Activities. (2 cr.; A-F or Audit; Every Fall) Addresses basic skill progressions; teaching strategies, skill development activities, and skill analysis for teaching team sport activities. Emphasis placed upon student development of personal competence in the activity. prereq: Pre-PETE major

PETE 1003. Teaching Outdoor Activities in Physical Education. (2 cr.; A-F or Audit; Every Spring) Focus is on teaching physical educators how to implement outdoor activities as part of the K-12 physical education curriculum. Included are such activities as hiking, backpacking, climbing, skiing, primitive camping, canoeing, snowshoeing, and hiking. Emphasis is on risk management and common pedagogical knowledge and skills which cut across activities. Students participate in the scope and sequence for skill development in two outdoor activities, and plan for a third outdoor activity. prereq: Pre-Physical Education Major

PETE 1004. Teaching Recreational and Lifetime Activities. (2 cr.; A-F or Audit; Every Spring) Basic skill progression, teaching strategies, skill development activities, and skill analysis for teaching recreational and lifetime activities; emphasis placed upon student development of personal competence in the activity. prereq: Pre-Physical Education Major

PETE 1005. Teaching Physical Fitness Activities. (2 cr.; A-F or Audit; Every Spring) Basic skill professional, teaching strategies, skill development activities, and skill analysis 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 aquatics. 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 PETE 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 4225, Secondary Teacher Education 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 prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: grad student, instructor consent

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**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. prerequisite: 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. prerequisite: 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. prerequisite: Will not satisfy major or minor requirements in physics

**PHYS 1012. Conceptual Physics Lab.** (1 cr.; A-F or Audit; Every Fall & Spring) Laboratory covering basic physics principles including mechanics, waves, and optics. prerequisite: 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 2015 should be taken concurrently. The combination of PHYS 2013 and 2014 meets liberal education category 4. prerequisite: previous or concurrent registration in PHYS 2014. Prerequisite of Math 1250 or 1296, should be taken concurrently. The combination of PHYS 2014 and PHYS 2017 meets liberal education natural science with lab. prerequisite: Previous or concurrent registration in PHYS 2014. Previous or concurrent registration in Math 1290 or Math 1296 or 1596, or physics major or instructor permission. Credit will not be granted if already received for PHYS 2011 or PHYS 2013.

**PHYS 2014. General Physics Lab I.** (NAT SCI; 1 cr.; A-F or Audit; Every Fall, Spring & Summer) Calculus-based introduction to Newtonian Mechanics, fluid mechanics, and heat, exemplified by laboratory study. This laboratory accompanies lecture PHYS 2013 and should be taken concurrently. The combination of PHYS 2013 and 2014 meets liberal education category 4. prerequisite: previous or concurrent enrollment in PHYS 2013 or 2017

**PHYS 2015. General Physics II.** (4 cr.; A-F or Audit; Every Fall & Spring) Calculus-based introduction to electricity, magnetism and optics exemplified by laboratory study. This laboratory accompanies lecture PHYS 2015 and should be taken concurrently. prerequisite: Previous or concurrently enrollment in PHYS 2015 or 2018.

**PHYS 2017. Honors: General Physics I.** (NAT SCI; 4 cr.; A-F or Audit; Every Fall) Advanced coverage of General Physics topics that include Newtonian Mechanics, fluid mechanics, and heat. Mathematically and conceptually demanding problem solving techniques. The companion laboratory, PHYS 2014, should be taken concurrently. The combination of PHYS 2014 and PHYS 2017 meets liberal education natural science with lab. prerequisite: Previous or concurrent registration in PHYS 2014. Previous or concurrent registration in Math 1290 or Math 1296 or 1596, or physics major or instructor permission. 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, multielectron atoms, molecular structure, quantum statistics, thermal radiation, solid state physics, nuclear physics. prerequisite: 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. prerequisite: 2015 or 2016 and 2015 as pre or coreq

**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. prerequisite: 2021 and 2022 (current registration is allowed)

**PHYS 2199. Physics Tutoring.** (1-2 cr. [max 10 cr.]; S-N or Audit; Every Fall & Spring) Tutoring students in 1xx- and 2xx-level physics courses. prerequisite: 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 Every 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, 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. prereq: 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. prereq: 2021, 2022, MATH 3280, 3298

PHYS 5041. Optics. (3 cr. ; A-F or Audit; Spring Even Year) Fundamentals of physical optics. prereq: 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 experiment with simulations of physical systems. prereq: 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 physics, physical oceanography and meteorology. (2 hr lect & 2 hr lab) prereq: 2012 or 2015 or 2016, 1 sem programming, lab or field experience beyond 2010/2015 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. prereq: 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, Shor'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. prereq: Sr or grad student

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 structure, 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

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.

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 & OR; 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; Periodic Fall) Approaches to policy study, context of policy process, and discussion of policy issues. prereq: 1011 and 30 earned or in-progress credits or instructor consent

POL 3015. State and Local Government. (4 cr.; A-F or Audit; Periodic Spring) State and local governments in the United States; governmental institutions and processes; intergovernmental relations. Special reference to Minnesota. prereq: 1011 and 30 earned or in-progress credits or instructor consent

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; Periodic Spring) Women's political status; implications of women's role in political process; women as political actors; feminist critique and vision of politics. prereq: 30 earned or in-progress credits or instructor consent

POL 3080. Environment and Politics. (3 cr.; A-F or Audit; Periodic 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 and 30 earned or in-progress credits or instructor consent

POL 3097. Government Internship. (1-12 cr.; S-N only; Every Fall, Spring & Summer) Scheduled work assignments with direct supervision in performance of governmental functions; full- or part-time employment. Allow up to 12 repetitions totalling up to 12 credits. Only 4 cr from 3097 and 3197 may be applied toward the political science major. prereq: minimum 60 cr earned or 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 and 30 earned or in-progress credits or instructor consent

POL 3131. Judicial Politics and Policy Making. (3 cr.; A-F or Audit; 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; 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; Periodic 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. Typically offered in the fall during national election years. prereq: 1011 and 30 earned or in-progress credits or instructor consent

POL 3143. Political Psychology. (3 cr.; A-F or Audit; Periodic Spring) Study 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: 30 earned or in-progress credits or instructor consent

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); affirmative action. prereq: 1011 and 30 earned or in-progress credits 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 and 30 earned or in-progress credits or instructor consent

POL 3170. Political Interest Groups and Individuals. (3 cr.; A-F or Audit; Periodic Spring) 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 and 30 earned or in-progress credits or instructor consent

POL 3195. Special Topics: (various titles to be assigned). (3 cr. [max 6 cr.]; A-F or Audit; Periodic Fall, Spring & Summer) Political science topics not included in regular curriculum.

POL 3197. Nongovernmental Internship. (1-12 cr.; S-N only; 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. Allow up to 12 repetitions totalling up to 12 credits. Only 4 cr max from 3097 and 3197 may be applied toward the political science major. prereq: minimum 60 cr and instructor consent
POL 3311. Public Opinion and Polling Methods. (4 cr.; A-F only; Periodic 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 and 30 earned or in-progress credits or instructor consent

POL 3400. Contemporary Issues in World Politics. (4 cr. [max 8 cr.]; A-F or Audit; Periodic Fall) Detailed examination and analysis of selected contemporary issues in world politics and international relations. Policy recommendations dealing with each issue. Students can repeat this course for a maximum total of 8 credits. Prereq: 1050 and 30 earned or in-progress credits or instructor consent

POL 3403. American Foreign Policy. (3 cr.; A-F; Periodic Fall) 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 and 30 earned or in-progress credits or instructor consent

POL 3420. International Organization and Global Governance. (3 cr.; A-F or Audit; Periodic Spring) 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 30 earned or in-progress credits or instructor consent

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: 30 earned or in-progress credits 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 3456. International Security: War and More. (4 cr.; A-F or Audit; Periodic Spring) 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: 30 earned or in-progress credits or instructor consent

POL 3458. International Negotiation & Bargaining: Negotiating Across Cultures. (3 cr.; A-F or Audit; Periodic Fall) Cultural understanding and misunderstanding can determine the outcome of international negotiation and bargaining. Word choice becomes particularly significant in global negotiations. In this class, we explore how international solutions in various areas, such as the environment, business, politics, and human rights, are produced through negotiation and influenced by culture, language, and behavior. Pre-req: minimum 30 credits

POL 3511. Politics of South Asia. (3 cr. [max 4 cr.]; A-F or Audit; Periodic Fall & Spring) 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 or instructor consent

POL 3515. Theories of Comparative Politics. (3 cr. [max 4 cr.]; A-F or Audit; Periodic Fall) Introduces the theoretical, methodological, and substantive debates in the discipline of comparative politics. Prereq: 1500 and 30 earned or in-progress credits or instructor consent

POL 3517. Western European Political Systems. (4 cr.; A-F or Audit; Periodic Fall) 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: 30 earned or in-progress credits 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 era of globalization. Pre-req: POL 1500 or instructor's consent

POL 3525. African Politics. (3 cr.; A-F or Audit; Periodic Fall) 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 and 30 earned or in-progress credits or instructor consent

POL 3530. Comparative Constitutional Law and Judicial Politics. (3 cr.; A-F or Audit; Periodic Spring) 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 minority rights, social change, and economic development. Prereq: 30 earned or in-progress credits or instructor consent

POL 3570. Politics of Developing Nations. (3 cr.; A-F or Audit; Periodic Fall & Spring) Nature of political development, individual and institutional causes and consequences of development; political economy of the Third World. Prereq: 1050 or 1500 and 30 earned or in-progress credits or instructor consent

POL 3575. Latin American Politics and Development. (4 cr.; A-F or Audit; Periodic Spring) 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: 30 earned or in-progress credits or instructor consent

POL 3580. Central American Politics. (3 cr.; A-F or Audit; Periodic Spring) 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 local organizations and individuals can (or cannot) contribute to alleviating these problems. Prereq: 1050 and 30 earned or in-progress credits or instructor consent

POL 3600. Political Concepts. (4 cr.; A-F or Audit; Periodic 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: 30 earned or in-progress credits or instructor consent

POL 3610. Political Economy: An Introduction. (3 cr.; A-F or Audit; Periodic Spring)
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. prerequisite: 30 earned or in-progress credits or instructor consent

POL 3651. Classical Political Thought. (4 cr.; A-F or Audit; Periodic 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. prerequisite: 1610 or instructor consent

POL 3652. Modern Political Thought. (4 cr. [max 12 cr.]; A-F or Audit; Periodic 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). Students can repeat this course for a maximum total of 12 credits. prerequisite: 1610 or instructor consent

POL 4190. Senior Seminar. (4 cr.; A-F only; Every Fall & Spring) Supervised research and writing in current areas or issues of politics and political science, subject matter varying with instructor. Recommended prerequisite: 6 cr in relevant upper division political science courses prerequisite: instructor consent

POL 4191. Independent Study. (1-4 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer) Advanced study and research under supervision of a faculty member. Student must consult with faculty member before registration. Students can repeat this course for a maximum total of 6 credits. recommended prerequisite: 8 cr in political science and 6 cr in other social sciences prerequisite: instructor consent

POL 4195. Special Topics: (various titles to be assigned). (1-3 cr. [max 9 cr.]; A-F or Audit; Periodic Fall & Spring) Political science topics not included in the regular curriculum. Students can take a maximum of three different topics. Students can repeat this course for a maximum total of 9 credits. prerequisite: 30 earned or in-progress credits or instructor consent

POL 4910. Teaching Assistantship in Political Science. (1-2 cr. [max 3 cr.]; S-N only; 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. Students can repeat this course for a maximum total of 3 credits. recommended prerequisite: 90 earned or in-progress credits and political science major prerequisite; instructor consent; no graduate credit

**Psychology (PSY)**

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 3003. 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, prerequisite: Pre-psychology or psychology major

PSY 4190. 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. Recommended prerequisite: 6 cr in relevant upper division political science courses prerequisite: instructor consent

PSY 4191. Independent Study. (1-4 cr. [max 6 cr.]; A-F only; Every Fall, Spring & Summer) Advanced study and research under supervision of a faculty member. Student must consult with faculty member before registration. Students can repeat this course for a maximum total of 6 credits. recommended prerequisite: 8 cr in political science and 6 cr in other social sciences prerequisite: instructor consent

PSY 3601. 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. prerequisite: 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. prerequisite: 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. prerequisite: 2003, 3020, Psychology major prerequisite: 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. prerequisite: psychology major, PSY 3020, 3021 or instructor consent prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: 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) Mentaland 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 antipsychotic, anxiolytic, sedative, 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 transpersonal experiences. Concerned with the whole 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 3601. Psychology of Personal Development. (3 cr.; A-F or Audit; Periodic Fall & Spring) Focuses on discovery of self and spiritual journey. Examining 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 3611. 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 3613. 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 relationship, parenting, clinical applications and 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 3621. 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 3631. Cognitive Development: Ways of Knowing. (3 cr.; A-F or Audit; Periodic Fall) Development of cognitive processes from infancy through adolescence. Perception in infancy; development of information processing capacities; constructing understandings; language, culture and thinking; thinking as theory building; thinking about self and others. Impact of research on child rearing, education, public policy.

PSY 3661. Psychology of Language. (3 cr.; A-F or Audit; Periodic Fall) Psychological processes underlying comprehension, production, and acquisition of language(s); cognitive, social, biological, and educational perspectives on language and their applications. prereq: 1003 or instructor consent

PSY 3697. Sensation and Perception. (4 cr.; A-F or Audit; Every Fall & Spring) Theories, methods, and findings in study of sensory and perceptual processes; psychophysics and psychophysiology of visual, auditory, gustatory, olfactory, cutaneous, kinesthetic, vestibular, and pain senses; analysis of perceptions of constancy, illusion, space, time, motion, and form. prereq: PSY 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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
PSY 3986. 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 adviser and a written and/or oral report is required. prereq: psychology major, 3.00 GPA overall; 3.25 GPA Psychology

PSY 3989. 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 University or community activities to gain experience in 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 4120. Foundations of Clinical Psychology. ( 3 cr. ; A-F or Audit; Periodic Spring)
An overview of clinical psychology as well as contemporary issues and trends within the field. Emphasizes areas in which clinical psychologists are principally 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 involving 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 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 & Summer)
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)
Examines the application of psychology to the judicial system in such diverse areas as criminal diversion and rehabilitation; expert testimony; jury selection; police training; divorce mediation; and custody evaluations. prereq: 1003 or instructor consent

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, environmental assessment tools, empirically based intervention designs, workplace policy, 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 graduate 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 graduate 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 contents 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 graduate student or instructor consent; credit will not be granted if already received for 3707

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: Dostoeovsky, 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 Fedor 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 PER,HUMANITIES; 4 cr.; A-F or Audit; Fall Odd Year)
This course examines texts by celebrated Russian authors from the twentieth century, including the short stories, novels and poems of authors such as Anton Chekhov, Andrei Beli, Anna Akhmatova, Lev Gumilev, Vladimir Maiakovskii, Evgeni Zamytin, Mikhail Bulgakov, Boris Pasternak, Aleksandr Solzhenitsyn, and Viktor Pelevin. Through close readings and literary analysis, this course helps students develop their abilities as writers and critical thinkers, while exploring the tumultuous developments of twentieth century Russian society. Assignments give students the opportunity to engage with the historical specificity and the changing role of artistic expression in Russian culture, while also helping students develop their abilities to present extended analyses and deploy coherent argumentative strategies. Taught in English. prereq: Taught in English

RUSS 3405. Film and New Media in Russian Society. (FINE ARTS,GLOBAL PER; 4 cr.; A-F or Audit; Spring Odd Year)
This course introduces students to the transformative role that film and new media have played in Russian society, from the early beginning of film as a new art form to the dynamic role film and new media have come to play in the post-Soviet era. In this course students learn to reflect on film as an artistic medium, while also using their experiences with the films of the twentieth century to learn about the history of Russian society. Students also produce their own short films, practicing what they have learned from discussions and film analysis. Students choose screenplays and create their own films that reflect on the history of Russian film and the changing role of film as a medium in the twentieth century. Taught in English

Social Work (SW)

SW 1000. Introduction to Social Welfare. (SOC SCI; 3 cr.; A-F or Audit; Every Fall & Spring)
Contemporary social welfare problems and the historical development of social services programs designed to address them. Complex social problems, such as poverty, homelessness and child maltreatment examined, as well as the response of social institutions, social policies, and the profession of social work to these problems. Social justice issues and the role of citizen involvement to create change.

SW 1210. Global Issues. (SOC SCI,GLOBAL PER; 3 cr.; A-F or Audit; Every Fall & Spring)
Global problems of war, peace, national security; population, food, hunger; environmental concerns, global resources; economic and social development; human rights. Examines issues from a global problem-solving perspective. Value, race, class, gender differences.

SW 1212. Honors Seminar: Global Issues. (SOC SCI,GLOBAL PER; 3 cr.; A-F or Audit; Every Spring)
Focus on global problems of war, peace, and national security; population, food, and hunger; environmental concerns and global resources; economic and social development; human rights. Examination of issues from systems, problem solving, and futurist perspectives in honors seminar format. prereq: Honors student consent

SW 1619. Race, Class, and Gender in the United States. (SOC SCI,GLOBAL PER,PSY; 3 cr.; A-F or Audit; Every Fall)
Race, class, and gender as pivotal dimensions in American society. Similarities and differences between groups, dynamics of discrimination, and efforts to meet needs and achieve potential for all groups in America.

SW 4100. Anti-Oppressive Social Work Practice. (3 cr.; A-F only; Every Fall)
Examines societal issues generated by systemic discrimination and explores methods for reducing discrimination. Particular focus on advanced social work practice with diverse populations. prereq: admission to social work program, 4111 or instructor consent; no grad credit

SW 4101. Human Behavior in 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, organization, communities, and society/culture. prereq: 1000 (concurrent registration is allowed); admissions to Social Work major or instructor consent; no grad credit

SW 4102. Introduction to Social Work Research. (3 cr.; A-F only; Every Spring)
Introduction to social science research and its applications to social work and social welfare. Cultural competence and relation of practice and research. prereq: Admission to Social Work major; previously completed or concurrent registration with a statistics course (PSY 2020 or 3020 or STAT 1411 or 2411 or ECON 2030 or SOC 2155) or instructor consent; no grad credit

SW 4103. Senior Capstone Project. (2 cr.; S-N only; Every Spring)
This course will help students complete their ePortfolio which is the capstone project for the social work program. prereq: SW 4121 (concurrent registration is allowed); admission to Social Work major; or instructor consent; no grad credit

SW 4111. Introduction to Individual, Family and Group Practice. (3 cr.; A-F only; Every Spring)
Introduction to generalist social work practice, social work ethics, the ecological perspective, and the problem-solving model. prereq: Admission to social work program, 1000, 4101 or instructor consent; no grad credit

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
SW 4112. Organization and Community Practice. (3 cr.; A-F only; Every Fall) Development of knowledge and skills for beginning-level macro social work practice. Topics include understanding human service organizations, promoting organizational change, using supervision, community advocacy, policy practice, ethics, and cultural competence. prereq: Admission to social work program, 4111 or instructor consent; no grad credit

SW 4113. Introduction to Child Welfare Practice. (3 cr.; A-F only; Every Spring) Introduction to social work child welfare practice, with a focus on practice in public sector county and tribal settings and a special emphasis on child protection. prereq: Admission to social work program, 1000 or instructor consent; no grad credit

SW 4120. Community Volunteer Experience. (1 cr.; S-N only; Every Spring) Community volunteer experience with emphasis on working with vulnerable populations. Beginning experience in a social service setting to acquire skills in relationships building and to develop understanding of social work ethics, values, and roles in a diverse society. Seminars will focus on student exploration of self in relationship to helping. prereq: Admission to social work program, background check, C+ or better in SW 1619, SW 4101 and SW 4201 and instructor consent; no grad credit

SW 4121. Senior Field Placement. (5 cr. [max 10 cr.]; S-N only; Every Fall & Spring) Practicum experience with emphasis on developing knowledge and skill base for 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: Admission to social work program; C+ or better in SW 1619, SW 4101, SW 4201, SW 4102, SW 4111 and ‘S’ in SW 4120, instructor consent; no grad credit

SW 4122. Cross-Cultural Exploration Through Learning Circles. (1 cr. [max 2 cr.]; S-N or Audit; 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 BSW program, SW 1619, SW 4100 or other diversity course, or instructor consent; no grad credit; credit will not be granted if already received for SW 5120

SW 4144. Grief, Loss and Coping. (2 cr.; A-F or Audit; Every Fall, Spring & Summer) Students will gain conceptual understanding, advanced assessment and intervention skills, and competencies related 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 critical reviewed to guide application of best social work practices and/or evidence-based assessment, interventions and evaluation. Interdisciplinary collaboration and application skills is emphasized. Self-reflection on personal experiences is part of this course to reinforce professional skills, boundaries and ethical conduct. prereq: minimum 60 credits or instructor consent; no grad credit; credit will not be granted if already received for SW 5144

SW 4190. American Indian Social Work Practice Issues. (3 cr.; A-F only; Every Fall) Introduction to historical and contemporary social work practice issues with American Indians. Policy issues, cultural and sensitivity knowledge, and practice methods with American Indian clients and communities at micro and macro levels of intervention. prereq: 4111; admission to Social Work major or instructor consent; no grad credit

SW 4201. Social Welfare Policy. (3 cr.; A-F only; Every Fall) Overview of major social welfare policies in the United States. Policy analysis from a historical, social, economic and political perspective. Focus on policy practice roles for social workers as policy analysts and advocates for social justice. prereq: 1000 (concurrent registration is allowed); admission to Social Work major; or instructor consent; no grad credit

SW 4215. Trauma Informed Practice with Children and Adolescents. (2 cr.; A-F or Audit; Every Fall, 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 for trauma informed practice. prereq: undergraduate student, minimum 60 credits, no grad credit

SW 4222. Intervention in Family Violence. (2 cr.; A-F or Audit; Periodic Fall & Summer) Current theory, research, and practice in the field of family violence. Multidisciplinary assessment and intervention skills for working with families with diverse backgrounds are emphasized. prereq: minimum 30 credits, no grad credit; credit will not be granted if already received for SW 5222

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. prereq: 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. prereq: minimum 60 credits

SW 4500. Healthcare, Social Work, and Interdisciplinary Care. (2 cr.; Student Option; Fall Odd, Spr & Summer Even Yr) This course focuses on skill building and knowledge of social work roles in assessment, interventions, values, skills and competencies relative to interdisciplinary social work in healthcare settings. Student learning outcomes include the comprehension of professional collaboration and competencies as well as theoretical foundations, research, policies, and ethics. The course emphasizes providing interdisciplinary collaboration in various settings such as chronic illness; oncology/palliative care; community and public health; gerontology; pediatrics; emergency services; grief and loss; and, the importance of responding to cultural context. Additional content includes navigating medical infrastructures, such as HIPAA, health insurance, disability resources, Medicare/Medicaid, family support, mental health needs, advocacy, and information/referral. prereq: SW 1000, minimum of 60 credits or instructor consent; no grad credit

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 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,
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 critical reviewed to guide application of best social work practices and/or evidence-based assessment, interventions and evaluation. Interdisciplinary collaboration and application skills is emphasized. Self-reflection on personal experiences is part of this course to reinforce professional skills, boundaries and ethical conduct. 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 5500. Healthcare, Social Work, and Interdisciplinary Care. (2 cr.; A-F or Audit; Fall Odd Year)
This course focuses on skill building and knowledge of social work roles in assessment, interventions, values, skills and competencies relative to interdisciplinary work in healthcare settings. Student learning outcomes include the comprehension of professional collaboration and competencies as well as theoretical foundations, research, policies, and ethics. The course emphasizes providing interdisciplinary collaboration in various settings such as chronic illness; oncology/palliative care; community and public health; gerontology; pediatrics; emergency services; grief and loss; and, the importance of responding to cultural context. Additional content includes navigating medical infrastructures, such as HIPAA, health insurance, disability resources, Medicare/Medicaid, family support, mental health needs, advocacy, and information/referral. Pre-req: MSW student or instructor consent

SW 5990. Pre-Field Work. (0 cr.; No Grade Associated; Every Fall & Summer)
This 0 credit courses 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).

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, CIVERSITY; 4 cr.; A-F or Audit; Every Fall & Spring)
Introduction to sociological concepts and their application.

SOC 1201. Sociology of the Family. (SOC SCI,CIVERSITY; 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)
Application of qualitative research methods to study of social structures. Emphasizes field techniques, secondary data analysis, and interpretation. Lab prereq: 2155, crim major or soc major or URS major, min 30 cr

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 U.S. Civil Rights Movement. (SOC SCI,CIVERSITY; 3 cr.; A-F or Audit; Every Fall)
Examination of theories and research relating to the U.S. 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

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WRIT 31xx; no grad credit

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. (6-8 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: 90 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 4937, 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 1000, 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. (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 intersection of gender, race, and class. Some consideration given to global explorations and international comparisons. prereq: 1101 or CRIM 1301 or CRIM 1301 or ANTH 1604 or WS 1000, 60 cr or instructor consent

SOC 4948. 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 CRIM 1301 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 movements to the study of protest tactics to the policing of protests and counter-insurgency. prereq: 60 cr or grad student or instructor consent

SOC 4982. Political Sociology and the Global Economy. (4 cr.; A-F or Audit; Every Fall)
Explores the field of power and economics, understanding the major theoretical debates and issues both past and present. Examines the nature of the state and economy, while also examining how class, race, and gender shape both the political and economic process. Focuses on how power is constructed and legitimated, and delegitimated concentrating on state formation, expansion, rebellion, and revolution. prereq: 60 credits or instructor consent or grad student

SOC 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

SOC 4991. Independent Study in Sociology. (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. prerequisite: instructor consent; maximum 6 credits allowed between SOC 4991 and CRIM 4391

SOC 4999. Honors Project Sociology. (1-4 cr. max 8 cr.; A-F or Audit; Every Fall, Spring & Summer)
Advanced individual project in any area of sociology, demonstrating sound theoretical and research foundations and resulting in a written report. prerequisite: 30 cr. approval by dept honors program director; no grad credit; maximum 8 credits allowed between SOC 4999 and CRIM 4399

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. prerequisite: Little or no prior formal study of this language, or instructor consent

SPAN 1102. Beginning Spanish II. (COMM & LAN; 4 cr.; A-F or Audit; Every Fall & 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. prerequisite: 1-2 yrs high school Spanish 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 development 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. prerequisite: 3-4 yrs high school Spanish 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. prerequisite: 4 yrs high school Spanish 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. prerequisite: 5 yrs high school Spanish or 1202 or instructor consent

SPAN 2540. Latino Literatures and Cultures. (CDIVERSITY, HUMANITIES; 4 cr.; A-F or Audit; Periodic Fall & Spring)
The study of Latin America and its cultures 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 novels, comics, film, and theater, and will have the opportunity to collect oral 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, 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 geocultural 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 presentation, business communication, and administrative contexts, and will cultivate students’ geographic knowledge in conducting business, with emphasis placed on academic writing and research. Taught in Spanish. prerequisite: 2301 or instructor consent; no grad credit

SPAN 3042. Civilization, Cultures and Culture Communities 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. prerequisite: 2301 with C or better or instructor consent

SPAN 3044. Civilization, Cultures and Communities of 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. prerequisite: 2301 with C or better or instructor consent

SPAN 3097. Internship. (1-6 cr.; S-N only; Every Fall, Spring & Summer)
Internship arranged with Spanish abroad program requires consent from the International Programs and Services Office.

SPAN 3894. Language and Culture in Spain - Study Abroad. (GLOBAL PER; 6 cr.; A-F only; Periodic Spring)
Monthly 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. prerequisite: completion of SPAN 1202 or higher; admission to an approved study abroad program requires consent from the International Programs and Services Office.

SPAN 4011. Latin American Prose. (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. prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: 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. prerequisite: 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 18th 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 4040. 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. Focus on academic writing and research. Taught in Spanish. prereq: 2301 with C or better or instructor consent; no grad credit

SPAN 4041. 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 & Summer)
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 or 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 Fall & 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 UECH program

SPED 3109. Supporting Social/Emotional Development Birth-8. (; 3 cr.; A-F or Audit; Every Fall & Spring)
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 UECH 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 (IFSP) and Individualized Education Plans (IEP). prereq: admitted to UECH program

SPED 3415. Special Education in the Secondary School. (; 3 cr.; A-F only; Every Fall & Spring)
Exploration of topics in exceptionality 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 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 4433, admission to IESE program and successful completion of Block One courses and associated field experience or SPED post bac, no grad credit

SPED 4250. Foundations of Autism Spectrum Disorders. (; 3 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/IFIP development and implementation, and technology on the continuum of placements for children and youth with ASD. prereq: 4250 or 5250 or 4270 or 5270; 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, 4260 and 4270; no grad credit

SPED 4310. Response to Intervention in the General Education Classroom. (3 cr. [max 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. (3 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 5381. Practicum prereq: 4433, Admission to IESE program or postbac sped; no grad credit

SPED 4530. Intervention Strategies for the Young Child with Autism and Autism Spectrum Disorders. (4 cr.; A-F or Audit; Fall Every Spring) Overview of children with moderate to severe developmental 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 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. Prereq: 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 5024. Assessment in the General and Special Education Classroom. (3 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

SPED 5250. Foundations of Autism Spectrum Disorders. (3 cr. [max 4 cr.]; A-F or Audit; Periodic Spring & Summer) 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/IEP 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, instructor consent

SPED 5361. Characteristics of Developmental Disabilities. (4 cr.; A-F or Audit; Periodic Summer) 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
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 MATH 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 a math or statistics major

STAT 3611. Introduction to Probability and Statistics I. (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: Stat 3611 and Math 1297 or equivalent or instructor consent

STAT 4040. Introduction to Survey Sampling. (3 cr.; A-F or Audit; Every Fall)
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/exposure 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: Math 3280 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: Stat 4111 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 prediction in linear regression model. Analysis of residuals, model selection, transformations, and use of computer software. prereq: Stat 4111 or 4511 or Math 3280 or Math 4326, a grade of C- or better is required in all prerequisite courses

STAT 5515. Multivariate Statistics. (3 cr.; Student Option; Fall Odd Year)
Multivariate normal distribution, MANOVA, canonical correlation, discriminate analysis, principal components. Use of computer software. prereq: Stat 4111 or 5111, Math 3280 or Math 4326, a grade of C- or better is required in all prerequisite courses

STAT 5521. Applied Time Series Analysis. (3 cr.; A-F or Audit; Every Spring)
Characteristics of time series; time series regression and exploratory data analysis; introduction of ARIMA models, including model building, estimation and forecasting; spectral analysis and filtering. Use of statistical software R. prereq: Math 3280, Stat 3612 or 5111 or instructor consent

STAT 5531. Probability Models. (4 cr.; A-F or Audit; Every Fall & Spring)
Development of probability models and their applications to science and engineering. Classical models such as binomial, Poisson, and exponential distributions. Random variables, joint distributions, expectation, covariance, independence, conditional probability, Markov processes and their applications. Selected topics in stochastic processes. prereq: Stat 3611, Math 1297 or Math 1597, a grade of C- or better is required in all prerequisite courses

STAT 5571. Probability. (4 cr.; A-F or Audit; Every Fall & Spring)
Axioms of probability. Discrete and continuous random variables and their probability distributions. Joint and conditional distributions. Mathematical expectation, moments,
correlation, and conditional expectation. Normal and related distributions. Limit theorems. prereq: 3611, Math 3298, a grade of C- or better in is required in all prerequisite courses

**STAT 5572. Statistical Inference.** (; 4 cr.; A-F or Audit; Every Spring)
Mathematical statistics; Bayes’ and maximum-likelihood estimators, unbiased estimators; confidence intervals; hypothesis testing, including likelihood ratio tests, most powerful tests, and goodness-of-fit tests. prereq: STAT 3612 and 5571 with a grade of C- or better

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**Supportive Services Program (SSP)**

**SSP 1001. Reading to Remember.** (1 cr.; A-F or Audit; Every Fall & Spring)
Do you ever read an article or chapter and then forget what you just read? Do you sometimes feel overwhelmed with the amount and complexity of reading required in college? Reading to Remember will help you learn and apply the use of active reading strategies to enhance understanding and improve recall of information from various texts. The course emphasizes metacognition in the reading process, including previewing, questioning, annotating, discussing, and responding to texts.

**SSP 1002. Managing Time and Stress.** (1 cr.; A-F or Audit; Every Fall & Spring)
This course introduces various time and stress management tools and techniques, including planning, prioritizing, minimizing procrastination, avoiding switch-tasking, and practicing mindfulness.

**SSP 1004. Studying, Note Taking, and Test Taking.** (1 cr.; A-F or Audit; Every Fall & Spring)
Students will understand, analyze, and apply more effective ways to learn and retain information. Topics of focus will include: various note-taking systems, research-based study techniques, and before-during- and after-test taking strategies.

**SSP 1050. Independent Study in Individualized Approaches to Learning.** (; 1 cr.; Student Option; Every Fall & Spring)
This independent study provides students who are feeling challenged by the academic demands of college with an opportunity to consult with SSP faculty and to develop an individualized approach to learning in response to those challenges. Students are given the tools necessary to take ownership of their learning experience, so that they might persevere and persist in their studies at UMD.

**SSP 1052. Academic Reading and Writing at the College Level.** (3 cr.; A-F or Audit; Every Fall & Spring)
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 touring 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 leadership and communication training for experience 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. pre-req: 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. pre-req: 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. pre-req: 3003 or instructor consent

**SSP 3005. UMD Seminar Peer Leader 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. Peer Leader 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)
Theatre (TH)

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 Private Singing Lesson 1st Year BFA Musical Theatre Emphasis. (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: BFA Musical Theatre Emphasis with maximum of 30 credits completed

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. prereq: 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 constructing and painting scenery and properties for theatrical productions. (90 hrs work) prereq: Th major or minor

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. prereq: 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) prereq: 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. prereq: 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) prereq: 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) prereq: 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. prereq: 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. prereq: 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. prereq: 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. prereq: 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 2118. Speech for the Actor. (3 cr.; A-F or Audit; Every Fall) Ear training and articulation (in anticipation of dialects); acquisition of nonregional dialect for the stage through use of phonetics and classical texts. prereq: instructor consent

TH 2119. Stage Dialects. (3 cr.; A-F or Audit; Spring Even Year) Facilitates actor's acquisition and performance of stage dialects. prereq: 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. prereq: 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 from 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. prereq: 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. prereq: soph or instructor consent

TH 3111. Introduction to Scene Study. (3 cr.; A-F or Audit; Every Spring) Continuation of 1111. Development of acting skills beyond those taught in 1111. Work project emphasis on character transformation and contemporary scene study. prereq: 1111 or 1112 or instructor consent; not open to BFA th majors

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. prereq: 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. prereq: Third year Musical Theatre Students and instructor consent

TH 3115. Musical Theatre Singing III. (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 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 3351. prereq: 1301

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. (2 cr.; max 8 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. 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 the 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). (1-13 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.; 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 acting adjustments 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 4311. 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)
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. pre-req: 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, 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. pre-req: 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, nonprofits, 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: 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. pre-req: TAG major

TAG 3997. Internship in American Indian Studies. (4 cr. [max 8 cr.]; S-N only; Every Fall, Spring & Summer)
Supervised experience in a workplace relevant to a student’s academic and career interests; work plan and assignments must be approved by instructor. pre-req: Tribal Administration & Governance major, completion of at least 90 credits and instructor consent

TAG 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 have 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 peoples. The course will begin by asking about the origins of federal judicial power and their application indigenous peoples. pre-req: 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. pre-req: TAG major and minimum 60 credits

TAG 4910. 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. pre-req: 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 explore contemporary issues, challenges, and opportunities for tribal governments and consider innovative administrative/governance approaches. The significance of how external decisions by the federal or state government might impact tribal decision making will be examined, pre-req: Tribal Administration & Governance major.

### Tribal Resource & Env Steward (TRES)

**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, pre-req: 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 examine topics and issues that a natural resource manager will face in the day-to-day operation of a comprehensive tribal natural resource and environmental management program in Indian County. These courses will provide an overview of a tribal natural resource director’s basic functions and responsibilities, the types of programs and projects that trial natural resources department might implement, the agencies and other sources that provide funding and the knowledge and skills that a director will need to operate an overall successful program. These courses will be taught from a practical, on-the-ground perspective to facilitate an understanding of the realities and typical circumstances that a tribal natural resource program director encounters. pre-req: admission to MTRES program or instructor consent

**TRES 5102. Tribal Natural Resource Program Management 2.** (.3 cr.; A-F or Audit; Every Fall)
This second course in tribal natural resource management will delve into greater detail on man of the topics covered in the first course and focus on case studies and evaluation of day operation of a comprehensive tribal natural resource and environmental management program in Indian Country. This course will address aspects of intergovernmental relations with other tribes and with federal, state, local and other agencies. pre-req: TRES 5101

**TRES 5201. Integrated Ecosystems Stewardship 1.** (.3 cr.; A-F or Audit; Every Spring)
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 5202. Integrated Ecosystems Stewardship 2.** (.3 cr.; A-F or Audit; Every Fall)
This course is the second 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 also be explored. This includes principles of the occurrence, extraction, and processing of 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

### Undergraduate Summer Research (UGRD)

**UGRD 4999. Undergraduate Summer Research.** (.0 cr.; No Grade Associated; Every Summer)
Undergraduate Summer Research

### University Studies (UST)

**UST 1000. UMD Seminar.** (1-2 cr.; A-F or Audit; Every Fall & Spring)
Facilitates the successful transition into college learning and student life at UMD. Credit will not be granted if already received for EHS 1000

**UST 1001. Undesignated University Course.** (0.5-6 cr.; Student Option; Periodic Fall, Spring & Summer)
Undesignated University transfer course

**UST 2001. Undesignated University Course.** (0.5-6 cr.; Student Option; Periodic Fall, Spring & Summer)
Undesignated University transfer course

**UST 3001. Undesignated University Course.** (0.5-6 cr.; Student Option; Periodic Fall, Spring & Summer)
Undesignated University transfer course

**UST 4001. Undesignated University Course.** (0.5-6 cr.; Student Option; Periodic Fall, Spring & Summer)
Undesignated University transfer course

### Urban and Regional Studies (URS)

**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. pre-req: URS major, jr or sr, instructor consent

**URS 3991. Independent Study in Urban and Regional Studies.** (1-4 cr. [max 6 cr.]; Student Option; Every Fall, Spring & Summer)
For students interested in doing advanced work in urban and regional studies, pre-req: 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

Courses listed in this catalog are current as of 2019-08-29. For up-to-date information, visit www.catalogs.umn.edu.
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 evaluate the concepts of universal subordination, particularly, a consciousness which categories women in the Global South as "overtly 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 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 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 3156. Feminist Research Methods Across Disciplines. (3 cr. ; A-F or Audit; Periodic Fall & Spring) This course seeks to assess knowledge-generating strategies, analysis and gendering of methods, how methods impact outcomes and develop critical awareness in doing research. This interdisciplinary course provides opportunities to practice and understand the advantages and disadvantages of multiple research methods; how research is positioned within the intersectionality of social, cultural, historical and political contexts that conditions the process of knowledge formation; and what makes a research feminist, queer, postcolonial, postmodern, and anti-racist.

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; Fall Odd Year)
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 elsewhere, 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 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 ecofeminist 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 shape love including 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 women'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 questions 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, admmission 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
WRIT 1006. Journal and Memoir Writing. (3 cr. : A-F or Audit; Periodic Fall & Spring) Study various published and unpublished journals and memoirs, write journals and memoirs, and read about social context of journals and memoirs.

WRIT 1120. College Writing. (WRITING; 3 cr. : A-F or Audit; Every Fall, Spring & Summer) Study and practice of writing tasks appropriate for the arts and letters. Seeks to advance research and critical thinking 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 1506. Literacy, Technology and Society. (HUMANITIES; 3 cr. : A-F or Audit; Periodic Fall & Spring) Historical survey of cultures without writing systems and cultures with writing systems and then later with printing, telegraph, radio, telephone, television, computers as well as other forms of technology. Survey of attitudes toward technology from Thoreau to Gandhi and beyond.

WRIT 2595. Special Topics: (Various Titles to Be Assigned). (1-3 cr. : A-F or Audit; Every Fall & Spring) Advanced study. Topic announced before course offered. prereq: 1000, 2101, 3010, 90 cr or grad student 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)
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 or Audit; 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 utilizes lectures, discussion, group work, and guest speakers. prereq: 1120, min 60 cr, no grad credit

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 only; 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 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 5991. max 3 cr may be applied to Grad prog, instructor consent

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 5991. max 3 cr may be applied to Grad prog, instructor consent