Course Designators

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

Course Numbers

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

Course Symbols

The following symbols are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.

= Credit will not be granted if credit has been received for the course listed after this symbol.
& Concurrent registration is required (or allowed) in the course listed after this symbol.
# Approval of the instructor is required for registration.
% Approval of the department offering the course is required for registration.
@ Approval of the college offering the course is required for registration.
, In prerequisite listings, comma means “and.”
1-4 cr [max 6]. The course can be taken for 1 to 4 credits and may be repeated for up to 6 credits.

Abbreviations

The following abbreviations are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.

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

Course Listing Sample

<table>
<thead>
<tr>
<th>Department</th>
<th>College</th>
<th>Course number</th>
<th>Course title</th>
<th>Course credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xology (Xolo)</td>
<td>Xology and Diometrics</td>
<td></td>
<td>Xolo 5101. Methods in Xology</td>
<td>(3-4 cr [max 8 cr]; A-F only; Prereq=3101 or #)</td>
</tr>
</tbody>
</table>

Historical, numerical, sociological, and Freudian methods of research in xology with applications to contemporary problems.

Credit will not be granted if credit has been received for the course listed after this symbol.
American Indian Studies (AMIN)

Academic Affairs

AMIN 1001. Beginning Dakota Language I. (4.0 cr.; fall, every year)
An introduction to speaking, writing, and reading Dakota language and an overview of Dakota culture.

AMIN 1002. Beginning Dakota Language II. (FL; 4.0 cr.; prereq 1001 or #; spring, every year)
A continuation of 1001 with greater emphasis on conversation and culture.

AMIN 1011. Beginning Anishinaabe Language I. (4.0 cr.; fall, every year)
An introduction to speaking, writing, and reading Anishinaabe language and an overview of Anishinaabe culture.

AMIN 1012. Beginning Anishinaabe Language II. (FL; 4.0 cr.; prereq 1011; spring, every year)
A continuation of 1011 with greater emphasis on conversation and culture.

AMIN 1101. Introduction to American Indian Studies. (HDIV; 4.0 cr.; fall, every year)
An introduction to American Indian histories, literature and other creative endeavors, and cultures. An interdisciplinary course emphasizing sovereignty, effects of government policies, and diversity of American Indian societies.

AMIN 1801. American Indian Song and Dance. (IC; 2.0 cr.; prereq new college student in the first semester of enrollment at UMM; fall, offered periodically)
An academic and active exploration of song and dance traditions from American Indian tribes.

AMIN 2011. Intermediate Anishinaabe Language I. (HUM; 4.0 cr.; prereq 1012 or placement or #; fall, offered periodically)
Review of the essential structural patterns of the Anishinaabe language; continued development of oral, aural, reading, and writing skills based on cultural and literary texts appropriate to this level.

AMIN 2012. Intermediate Anishinaabe Language II. (HUM; 4.0 cr.; prereq 2011 or placement or #; spring, offered periodically)
Review of the essential structural patterns of the Anishinaabe language; continued development of oral, aural, reading, and writing skills based on cultural and literary texts appropriate to this level.

AMIN 2211. First Nations Values and Spiritual Beliefs. (HDIV; 3.0 cr.; prereq #; spring, offered periodically)
Exploration of the foundational values and spiritual beliefs of Native Americans from around North America.

AMIN 2801. Anishinaabe Song and Dance: An Exploration of Song and Dance, Traditions and Practices. (HDIV; 4.0 cr.; prereq 1011 or #; spring, odd years)
Exploration of the language and culture of Anishinaabe song and dance traditions in historical and contemporary times. Learn the deeper meaning and different styles of the ceremonial practices of the Anishinaabe people, which include learning how to make hand drums and studying traditional dance societies and belief systems.

AMIN 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, summer, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

AMIN 3201. Oceti Sakowin: Lakota, Dakota, and Nakota History and Culture. (HDIV; 4.0 cr.; spring, offered periodically)
An interdisciplinary introduction to the history, culture, and sovereignty of the Oceti Sakowin, the Seven Council Fires of the Lakota, Dakota, and Nakota. Introduction to and discussion of the history and culture of the Oceti Sakowin with focus on contemporary issues in Indian Country.

AMIN 3202. Indigenous Landscapes. (HDIV; 4.0 cr.; spring, offered periodically)
Exploration of the importance of land to global indigenous populations beyond the United States: the Maori, Aboriginal Australians, and the Polynesian, Asian, and African peoples. Students investigate contemporary political movements, activism, and art forms employed by indigenous communities to maintain their life-ways and sovereignty.

AMIN 3211. Connecting Archaeology and Native America. (SS; 4.0 cr.; prereq #; spring, offered periodically)
Explore the theory and methods of archaeological research from the beginning of the discipline to today's new directions in the field. Apply the archaeology skills learned in class during a two-week summer archaeological dig gaining valuable hands-on experience in excavation. [Note: a two-week summer archaeological dig is required]

AMIN 3213. Indigenous Thought and Knowledge. (HDIV; 3.0 cr.; prereq #; spring, offered periodically)
Introduction to both historical and contemporary forms of indigenous thought in North America. In particular, focus is on the issues of "knowing differently" and of what indigenous thinkers call "the spiritual dimension" of their thought.

AMIN 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, summer, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ANTH 1111. Introductory Cultural Anthropology. (SS; 4.0 cr.; fall, spring, every year)
Varieties and range of human behavior as revealed through the comparative study of cultures throughout the world. Concepts developed by anthropologists to explain both the unity and diversity of humankind.

ANTH 1812. Human Societies: Past and Present, Fact and Fiction. (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
Consider fictional representations of human societies in the fantasy, science fiction, and alternate history genres. Compare these to ethnographic and archaeological readings, exploring the diversity of human societies, all around the world, from our earliest human ancestors through the modern era, with particular focus on social/political structures, gender roles, religion, and ethnicity. Consider what factors most strongly affect the structure of human societies, how these are or are not reflected in fiction, and how fiction reflects the authors' beliefs of what constitute the fundamental aspects of humankind, human personalities, and human societies.

ANTH 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
Students develop a working vocabulary of conceptually based signs. Emphasis is on receptive abilities. Students develop an awareness of the history of sign language and explore various signing systems, their most common uses, and the cultural rules and values of American Deaf culture. [Note: no credit for students who have received cr for Ed 1011]

ASL 1002. Beginning American Sign Language II. (FL; 4.0 cr.; prereq 1001 or placement or #; spring, offered periodically)
Continuation of the sequence beginning with 1001. Students develop a working vocabulary of conceptually based signs, receptive ability, and an awareness of the history of sign language. They also explore various signing systems, their most common uses, and the cultural rules and values of American Deaf culture. [Note: no credit for students who have received cr for Ed 1012]
Individualized on- or off-campus research project or other learning activity not covered in the regular Anthropology curriculum. Topic determined by the student and instructor.

**ANTH 2101. Biological Anthropology.** (SCI-L; 5.0 cr.; A-F only; spring, every year)

What is human nature, and how did we get this way? The class covers evolutionary theory, human and animal behavior, paleoanthropology, including DNA recovered through bioinformatic methods.

**ANTH 2993. Directed Study.** (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year)

Individualized on- or off-campus research project or other learning activity not covered in the regular anthropology curriculum. Topic determined by the student and instructor.

**ANTH 3204. Ecological Anthropology.** (ENVT; 4.0 cr.; prereq 1111 or 2101 or 2103; fall, every year)

Exploration of human ecology and the causes and effects of environmental change, using data from archaeology, biological anthropology, and cultural anthropology. Emphasis on understanding the social and economic context of human adaptations to the environment. Examination of cultures worldwide and through time that have (or have failed to) live sustainably.

**ANTH 3455. North American Archaeology.** (4.0 cr.; prereq 1111 or 2101 or 2103; fall, spring, offered periodically)

The archaeology of the societies located in the current United States and Canada prior to European colonization. Includes the earliest human colonization of North America (circa 12,000 years ago), early hunting and gathering societies, the development of agriculture, and the formation of complex chiefdoms. Emphasis on the diversity of cultures, languages, economies, and environments found throughout precontact North America.

**ANTH 3502. Latinos in the Midwest.** (SS; 4.0 cr.; spring, offered periodically)

Explore the history and experiences of Latinos in the Midwest United States. Starting from a historical perspective, the course examines issues including (im)migration, undocumented status, language, religion, race/ethnicity, media, and economy. A comparative framework emphasizes the unique context of migration into (rather than out of) rural communities as well as those far from a national border. Given the context of the rural Morris community, the focus is particularly on rural Latino experiences.

**ANTH 3601. Social Justice and Human Rights in Latin America.** (IP; 4.0 cr.; =SOC 3601; prereq 1111 or Soc 1101 or #; fall, every year)

Same as Soc 3601. Examination of social, economic, and political transformations in Latin America with an emphasis on social justice and human rights. Critical approaches to understanding U.S.-Latin American relations, labor struggles, rebellions to define alternative development, indigenous resistance to encroachment on resources and ways of life, civil war and genocide, and efforts to create a more environmentally and socially sustainable development.

**ANTH 3602. Women in Latin America.** (IP; 4.0 cr.; =SOC 3602; prereq 1111 or Soc 1101 or #; spring, every year)

Same as Soc 3602. Study of the social, economic, and political positions of women in Latin American countries. Topics include class and ethnic differences, women in the labor force, and women's participation in political movements through the lens of feminist theory.

**ANTH 3603. Latin American Archaeology.** (4.0 cr.; prereq 1111 or 2103; fall, spring, offered periodically)

Latin America from the earliest human colonization to European contact. Includes societies from northern Mexico through Tierra del Fuego, as well as the Caribbean. Covers early hunting gathering societies, origins of agriculture, the rise of powerful states and empires, and their influence on later Colonial-period societies.

**ANTH 3701. Forensic Anthropology.** (SCI-L; 4.0 cr.; prereq 2101 or Biol 2102; fall, odd years)

Recovery, identification, and analysis of human skeletal remains, including investigation techniques, identification of age, sex, ancestry, and cause of death. Two 65-min lectures and one 2-hour lab weekly.

**ANTH 3704. Anthropological Genetics.** (4.0 cr.; A-F only; prereq 2101 or Biol 1111; fall, offered periodically)

Genetic variation in Homo sapiens, links between genes and behavior, and environmental effects on gene expression. Inheritance, “race,” and population genetics. Genetics as a data source in paleoanthropology, including DNA recovered from fossil hominins. Human genetic change since the development of agriculture. Basic bioinformatic methods.

**ANTH 3993. Directed Study.** (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year)

Individualized on- or off-campus research project or other learning activity not covered in the regular anthropology curriculum. Topic determined by the student and instructor.

**ANTH 4411. Seminar in Anthropological Methodology.** (E/CR; 4.0 cr.; A-F only; prereq 1111 or Soc 1101, 4 addtl cr in Anth or Soc; fall, every year)

Exploration and evaluation of methods used in cultural anthropology: qualitative methods; research ethics; and design of qualitative research project.

**ANTH 4501. Archaeological Fieldschool.** (SS; 4.0 cr.; max 8.0 cr.; prereq #; summer, offered periodically)

Experience in archaeological fieldwork, including excavation, survey, artifact processing, and living under field conditions.
ARTH 4901. Seminar in Anthropological Theory. (4.0 cr.; A-F only; prereq 1111 or Soc 1101, 4 addtl cr in Anth or Soc; spring, every year) Examines the historical development of anthropological theory, influences that shaped historical and contemporary anthropological theories, and major debates regarding their interpretation.

ARTH 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) Individualized on- or off-campus research project or other learning activity not covered in the regular anthropology curriculum. Topic determined by the student and instructor.

Art Education Methods (ARTE) Division of Education

ARTE 4123. Methods of Teaching Art K-12. (4.0 cr.; A-F only; prereq admission to the secondary teacher education program, coreq SeEd 4102, SeEd 4103, SeEd 4104, SeEd 4105; fall, every year) Objectives, curricula, special methods, materials, and evaluation appropriate for teaching art in K-12.

Art History (ARTH) Division of Humanities

ARTH 1101. Principles of Art. (FA; 4.0 cr.; fall, spring, every year) An introduction to the theories, methods, and vocabulary of art history. Involves development of basic skills of research, analysis, and interpretation of individual works of art. Helps the student to understand the intrinsic as well as the historical-cultural meanings of works of art.

ARTH 1111. Ancient to Medieval Art. (FA; 4.0 cr.; fall, every year) Survey of the major works of art of western Europe from its origins in the Paleolithic period through to the full development of the Gothic era. Includes the monuments of ancient Mesopotamia, Egypt, Greece, and Rome as well as those of the Early Christian and Romanesque periods. Also includes some treatment of non-Western traditions in this era.

ARTH 1121. Renaissance to Modern Art. (FA; 4.0 cr.; spring, every year) Survey of the major works of art of western Europe and the United States from 1400 to the present.

ARTH 1801. Memorials and Memorialization. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) An exploration of the ways in which cultures throughout time have sought to commemorate life, and death, through visual forms. Examines various types of memorials, including monuments, tombstones, quilts, and tattoos, and considers how these visual media express what may elude words.

ARTH 1802. We Live in a World of Art and Heritage. (IC; 2.0 cr. [max 4.0 cr.]; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) An introduction to the theories, methods, and vocabulary of art history. Involves development of basic skills of research, analysis, and interpretation of individual works of art. Helps the student to understand the intrinsic as well as the historical-cultural meanings of works of art.

ARTH 2102. Art and Archaeology of Ancient Greece. (FA; 4.0 cr.; prereq any 1xxx ArtH course or sophomore status or #; fall, odd years) Beginning with the Bronze Age civilizations of the Aegean (Minoan, Cycladic, and Mycenaean), this course follows the development of the painting, sculpture, and architecture of ancient Greece, concentrating on the Classical period in Athens and the Hellenistic period in the Mediterranean.

ARTH 2103. Art and Archaeology of Ancient Rome. (FA; 4.0 cr.; prereq any 1xxx ArtH course or sophomore status or #; spring, odd years) In-depth study of Roman art and archaeology beginning with the Villanovans and Etruscans and ending with the rise of Early Christian art. Focus on the public and political art of the various emperors.

ARTH 3112. Art and the Byzantine Empire. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, even years) A chronological and socio-political exploration of the development of art within the Byzantine Empire. The various roles that this art took within and beyond the borders of Byzantium.

ARTH 3113. Early Islamic Art and Culture. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, even years) An investigation of Islamic art and architecture in both the secular and religious realm. Examination of these works in the context of the cultures and historical periods that produced them. Begins with the birth of Islamic art and continues up until the Ayyubid dynasty (14th century).

ARTH 3132. Castles and Cathedrals. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, odd years) An investigation of the two major forms of architectural construction in the Middle Ages. Exploration of the development of the cathedral and castle as architectural forms and examination of the circumstances surrounding their evolution through the medieval period. Examples are drawn from continental Europe, the British Isles, and the Levant.

ARTH 3133. Boundaries and Transitions in Medieval Art. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, even years) A thematic look at medieval art and architecture beyond the traditional focuses of inquiry such as Constantinople, Rome, and Paris. An examination of the art and architecture of the periods and areas of transition that are typically ignored or glossed over as derivative such as Late Antique, Crusader, and Ottoman.

ARTH 3142. Art of the Italian Renaissance, 1300-1520. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, odd years) A variety of methods (including stylistic, gender, and contextual theories) are used to explore the painting and sculpture of such artists as Giotto, Donatello, Leonardo, Raphael, and Michelangelo.

ARTH 3161. 16th-Century Italian Art. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, odd years) An investigation of the fascinating trends of Mannerist and Venetian Renaissance art, considered through the lenses of art theory, biography, social history, and style.

ARTH 3171. Baroque Art. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, even years) A sociohistorical consideration of the stylistic and thematic diversity present in the works of such 17th-century masters as Caravaggio, Bernini, Velazquez, Rembrandt, and Vermeer.

ARTH 3191. American Art to 1900. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, spring, offered periodically) A thematic exploration of the role of painting, sculpture, and the decorative arts in American society, from colonial times to 1900. Topics include the landscape and Manifest Destiny, American icons, folk art, and the representation of American Indians, African Americans, and women.

ARTH 3201. 19th-Century European Art through Post-Impressionism. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, odd years) Survey of major movements from Neoclassicism through Romanticism, Realism, and Impressionism to Post-Impressionism. Attention is given to iconographical and formal analysis as well as to the social conditions in which artists lived and worked.

ARTH 3211. Early Modernist Art: Symbolism to Surrealism. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, odd years) Survey of the major early modernist movements from Symbolism through Cubism, Futurism, Expressionism, Constructivism, De Stijl, and the Bauhaus to Surrealism. Attention is given to theories of modern art as well as to formal and iconographical analyses and to the social conditions in which modern art was created and experienced.

ARTH 3221. American Art from the End of Modernism to the Postmodern Present. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, even years) An examination of selected artists and movements from the 1940s through the present. Equal emphasis is given to the art and the social context in which it was made and experienced, and to modernist and postmodernist aesthetic and critical thought.

ARTH 3231. History of Photography. (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, even years) Survey of European and American photography from the period of invention to
the present. Major artists and movements are examined in the context of a variety of aesthetic, social, and technical issues.

**ARTH 3241. African American Art.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, even years)
Survey of African American art from colonial times to the present, focusing on social context and aesthetic and biographical issues.

**ARTH 3261. Chinese Art.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; spring, even years)
Survey of Chinese arts from the Neolithic times to the 20th century, presented in the context of Chinese culture.

**ARTH 3272. Athens, Art, and Theatre.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or #; attendance at evening UMM theatre performance required; fall, spring, offered periodically)
Classical Athens was a special place. It produced works of art and theatre that are still considered cultural treasures today. Combining archaeological, art historical, and textual sources, explore the context of these great works and links between the interaction with one another and with performances on the Morris campus today.

**ARTH 3273. Ars Otii: The Art of Roman Leisure.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or #; fall, spring, offered periodically)
What did Romans do in their free time? Explore the art of daily life in ancient Rome focusing on themes and activities related to leisure. Outside the home, Romans bathed, hunted, and went to the theatre. Inside the home, they held lavish dinner parties. In all of these activities, status and social display were of central concern.

**ARTH 3281. Women and Art.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, even years)
A historical survey of women’s roles as creators and patrons of the visual arts in Western European and American societies, from antiquity to the present.

**ARTH 3291. Facing the Past: Portraiture and Social History.** (FA; 4.0 cr.; prereq any 1xxx ArtH course or jr status or #; fall, spring, offered periodically)
This seminar examines functions and formats of portraits created primarily in Western Europe between 1400-1800, in order to gain greater insight as to how various social identities (such as that of husband and wife, child, friend, and freak of nature) were visually constructed and verbally interpreted.

**ARTH 3993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year)
Content and nature of the course to be determined by faculty and student consultation. May include individual research and writing, working in relation to the Art Gallery program, or travel and study. Prereq-Any 1xxx ArtH class or jr status

**ARTH 4810. Practicum in Art History Pedagogy.** (1.0-4.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
An individualized, hands-on, guided study of the process of teaching Art History. As part of a formal affiliation with an ArtH course, the student undertakes selected learning activities under supervision of the course instructor such as discussion group leader, test review leader, research assistant, and/or other teaching-related activities. Prereq-which requires an ArtH major or minor or double-major, must already have taken the 1xxx-level ArtH course that they wish to complete this practicum in conjunction with

**ARTH 4901. Capstone Assessment of Student Experience in Art History.** (1.0 cr.; S-N or Audit; prereq ArtH major, #; fall, spring, every year)
Allows students majoring in art history to reflect on the connections among the different courses and experiences they have had in the discipline by compiling a portfolio of their work, writing a short paper, and discussing their experiences with the faculty and other majors.

**ARTH 4993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year)
Content and nature of the course to be determined by faculty and student consultation. May include individual research and writing, working in relation to the Art Gallery program, or travel and study. Prereq-Any 1xxx ArtH class or jr status

**Arts, Studio (ARTS) Division of Humanities**

**ARTS 1001. Visual Studies for Non-Majors: Drawing.** (ART/P; 3.0 cr. [max 6.0 cr.; [ARTS 1070, ARTS 1080]; fall, spring, offered periodically)
For nonmajors with little or no experience in drawing. Exploration of observational drawing skills through line work in contour and gesture, continuing with studies in value, texture, and space. Contemporary and traditional modes of drawing explored using a variety of materials. [Note: no elective cr for ArtS majors or minors; materials fee required]

**ARTS 1101. Basic Studio Drawing I.** (ART/P; 2.0 cr.; prereq coreq 1101, 1103; one 1xxx ArtH course recommended during the same year; fall, every year)
Preparation for advanced work in studio art. Basic exercises of drawing, use and exploration of materials and methods in line and form development, problems of spatial representation. [Note: materials fee required]

**ARTS 1102. Basic Studio Drawing II.** (ART/P; 2.0 cr.; prereq coreq 1101, 1103, 1106; one 1xxx ArtH course recommended during the same year; spring, every year)
Preparation for advanced work in studio art. Basic exercises of drawing, use and exploration of materials and methods in line and form development, problems of spatial representation. [Note: materials fee required]

**ARTS 1103. Basic Studio 2-D Design.** (ART/P; 2.0 cr.; prereq coreq 1101, 1105; one 1xxx ArtH course recommended during the same year; fall, every year)
Preparation for advanced work in studio art. Elements of two-dimensional design and color theory, introduction to painting and printmaking. [Note: materials fee required]

**ARTS 1104. Basic Studio 3-D Design.** (ART/P; 2.0 cr.; prereq coreq 1103, 1102, 1106; one 1xxx ArtH course recommended during the same year; spring, every year)
Preparation for advanced work in studio art. Elements of three-dimensional design, introduction to sculpture. [Note: materials fee required]

**ARTS 1105. Basic Studio Discussion I.** (ART/P; 1.0 cr.; prereq coreq 1101, 1103, one 1xxx ArtH course recommended during the same year; fall, every year)
Preparation for advanced work in studio art. Theories, philosophy, history of visual arts, contemporary trends in art, selected readings.
ARTS 1106. Basic Studio Discussion II. (ART/P; 1.0 cr.; prereq 1105, coreq 1102, 1104; one 1xxx ArtH course recommended during the same year; spring, every year) Preparation for advanced work in studio art. Theories, philosophy, history of visual arts, contemporary trends in art, selected readings.

ARTS 1300. Watercolor Painting. (ART/P; 3.0 cr.; fall, spring, offered periodically) An introduction to various painting techniques in watercolor. [Note: materials fee required]

ARTS 1606. Film Studies and The Creative Process. (ART/P; 3.0 cr.; fall, spring, every year) Develops students' abilities to understand the construction of films and prepares students for film and video production. Focuses on major international movements in the history of documentary, fiction, or experimental film and video. Students create short videos linked to their understanding of the technologies, cinematic techniques, and the theoretical framework of films in these movements. [Note: students need a device capable of recording video, like a smart phone or similar device; materials fee required]

ARTS 1801. Mural Project and Public Art. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Understanding and exploration of contemporary mural art through reading, writing, and production of art. Collaborative production of a large-scale painted mural in a public setting. Designed for students who have a working knowledge of the basic principles and skills of art such as drawing, 2D and 3D design, composition, and color theory. [Note: materials fee required]

ARTS 1802. 2D Studies in Printmaking. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Introduction two-dimensional design concerns through the study of traditional printmaking techniques. Referencing the rich history of socially engaged printmaking as a guide for their own creative process, students learn how to visually express their own ideas related to contemporary social, political, and environmental concerns.

ARTS 1900. Fashion Trashion: Where Style Meets Sustainability. (ART/P; 1.0 cr. [max 3.0 cr.]; spring, every year) Studies in fashion, sustainability, and artistic performance culminating in a final project to design and complete a wearable item from recycled, repurposed, and reimagined items for display in a group runway fashion show. [Note: students must participate in spring runway show in April, held in the evening; materials fee required]

ARTS 2101. Drawing From Life I. (ART/P; 3.0 cr.; prereq major or minor or #; fall, every year) VR the study of human anatomy, the course increases and improves students' knowledge and skill in drawing as a traditional art form and as a preparation for work in other media. [Note: materials fee required]

ARTS 2102. Drawing From Life II. (ART/P; 3.0 cr.; prereq 2101 recommended; spring, every year) Allows students to use skills previously gained that relate to drawing the human form in a more individual way, integrates those skills with new ideas, and explores experimental drawing directions. [Note: materials fee required]

ARTS 3002. Media Studies: Artist's Books. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or #; fall, spring, offered periodically) Personal expression through artist's books. Designed for students who have a working knowledge of the basic principles and skills of art such as drawing, 2D and 3D design, composition, and color theory. [Note: materials fee required]

ARTS 3004. Media Studies: Mural Project and Public Art. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or #; fall, spring, offered periodically) Understanding and exploration of contemporary mural art through reading, writing, and production of art. Collaborative production of a large-scale painted mural in a public setting. Designed for students who have a working knowledge of the basic principles and skills of art such as drawing, 2D and 3D design, composition, and color theory. [Note: materials fee required]

ARTS 3100. Designing Sustainability: Human Needs as the Framework. (ART/P; 1.0 cr.; prereq 1105 recommended; fall, every year) Continued development of the skills and understandings required by traditional problems of drawing. [Note: materials fee required]

ARTS 3110. Advanced Drawing II. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq 2101, 2102 recommended; spring, every year) Emphasizes self-direction, experimental approaches and materials, and study of contemporary concepts. [Note: materials fee required]

ARTS 3200. Printmaking Studio I. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; fall, every year) Study of and practice in various methods of printmaking: application of drawing skills, color, composition, and personal expression to printmaking techniques. [Note: materials fee required]

ARTS 3210. Printmaking Studio II. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; spring, every year) Study of and practice in various methods of printmaking: application of drawing skills, color, composition, and personal expression to printmaking techniques. [Note: materials fee required]

ARTS 3300. Painting Studio I. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; fall, every year) The development of painting as a means of artistic expression including basic technical, material, and formal compositional problems. [Note: materials fee required]

ARTS 3310. Painting Studio II. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; spring, every year) The development of painting as a means of artistic expression including basic technical, material, and formal compositional problems. [Note: materials fee required]

ARTS 3400. Sculpture Studio I. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; fall, every year) Exploration of sculpture as a means of artistic expression, including an introduction to the planning and construction of three-dimensional forms using both traditional and contemporary techniques. [Note: materials fee required]

ARTS 3410. Sculpture Studio II. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or # for nonmajor jrs and srs; spring, every year) Exploration of sculpture as a means of artistic expression, including an introduction to the planning and construction of three-dimensional forms using both traditional and contemporary techniques. [Note: materials fee required]

ARTS 3500. Photographic and Digital Processes I. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or #; fall, every year) The development of photographic and digital processes as a means of artistic expression
including basic technical, material, and formal compositional problems. [Note: materials fee required]

ARTS 3510. Photographic and Digital Processes II. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq major or minor or #; spring, every year) The development of photographic and digital processes as a means of artistic expression including basic technical, material, and formal compositional problems. [Note: materials fee required]

ARTS 3650. Advanced Ceramics. (ART/P; 3.0 cr. [max 9.0 cr.]; prereq 1050 or #; fall, spring, offered periodically) For students who have a working knowledge of basic forming and glazing techniques. Emphasis on advanced hand building and wheel techniques, critiques, glaze experiments, and firing. Assigned projects for the course may vary from semester to semester. [Note: materials fee required]

ARTS 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ARTS 4902. Senior Thesis Project I. (2.0 cr.; A-F only; prereq senior ARTS major, completion of Second Year Portfolio Review; fall, every year) A two-semester sequential capstone course for majors, with a focus on the planning and preparation of a senior exhibit and the investigation of other professional skills. Group seminars include portfolio presentation, framing, interviewing, grant writing, and graduate school application. Individual creative research projects focus on development of a thesis and slide talk to accompany the final body of work exhibited in the HFA Gallery during the spring semester. Students participate in a portfolio review by the studio art and art history faculty, concentrating on work from the major medium and other work completed since the Second-Year Portfolio Review. Time of the review is arranged through the discipline coordinator. [Note: materials fee required]

ARTS 4903. Senior Thesis Project II. (1.0 cr.; A-F only; prereq 4902; spring, every year) A two-semester sequential capstone course for majors, with a focus on the planning and preparation of a senior exhibit and investigation of other professional skills. Students continue to develop and refine the thesis, slide lecture, and install work in the HFA Gallery during the spring semester for the Senior Exhibit. [Note: materials fee required]

ARTS 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

BIOL 1002. Human Nutrition. (SCI; 3.0 cr.; spring, every year) Nutrients essential to human life and well-being. Digestion, absorption, and metabolism of nutrients. Changes in metabolism during disease. Nutrients and their roles. Sports nutrition, weight loss/gain diets, nutritional myths. (two 65-min lect) [Note: no elective cr for biol majors or minors]

BIOL 1051. Wildlife Biology. (SCI-L; 4.0 cr.; =BIOL 1801; fall, spring, offered periodically) Biological principles and practices illustrated through studies of North American wildlife. Wildlife taxonomy, identification, migration and dispersal, ecological relationships, contemporary problems associated with human activities. (two 65-min lect, one 120-180 min lab/field study) [Note: no elective cr for biol majors or minors]

BIOL 1052. Introduction to Conservation Biology. (SCI-L; 4.0 cr.; spring, offered periodically) Survey of topics in conservation biology, with emphasis on topics that have created controversy and debate: loss of biodiversity; endangered species preservation and management, habitat conservation, environmental degradation, and sustainable development. (two 65-min lect, one 120- or 180-min lab or field study) [Note: no elective cr for biol majors or minors]

BIOL 1053. Introduction to Insect Biology. (SCI-L; 4.0 cr.; summer, offered periodically) Basic concepts in insect biology including evolutionary history, life-cycles, classification, and ecology; examination of how insects and other arthropods interact with human society including insects as vectors of human disease, forensic entomology, insects in agriculture, beneficial uses of insects in the production of food and fiber, and insect-inspired art and literature. (one all-day field trip required in addition to labs) [Note: no elective cr for biol majors or minors]

BIOL 1071. Plants of Minnesota. (SCI-L; 4.0 cr.; summer, offered periodically) Introduction to plant biology and function, especially those found in Minnesota: ecology, physiology, evolution, and conservation. Labs emphasize plant identification and anatomy. [Note: no elective cr for biol majors or minors]

BIOL 1111. Fundamentals of Genetics, Evolution, and Development. (SCI; 3.0 cr.; prereq biol major/minor or chem major or any health sciences preprofessional program or EIEd or SeEd major with middle school science specialties or #; fall, spring, every year) Introduction to scientific methods and the history of biology, with an emphasis on mechanisms of inheritance, development, and descent with modification. Overview of pre-Darwinian scientific thought; the theory of evolution; a qualitative introduction to genetics and molecular biology; and a summary of developmental biology. (two 75-min lect)

BIOL 1801. The Animals Around Us: Wildlife of Minnesota. (IC; 4.0 cr.; =BIOL 1051; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Discussion and examination of basic biological principles illustrated through studies of North American wildlife. Topics include movements and migration, behavior, conservation, and ecological relationships. Students research and discuss wildlife-related issues, and work together to learn how to identify species found in Minnesota. At least one field trip to observe local wildlife; additional field trips, time and weather permitting. (two 65-min lect, one 180-min lab or field study)

BIOL 2101. Evolution of Biodiversity. (SCI-L; 4.0 cr.; prereq 1101 or 1111 or #; spring, every year) Analysis of evolutionary trends using historical and contemporary evidence. Principles of classification and phylogenetic reconstruction. Includes laboratory survey of the major groups of organisms. (two 65-min lect, one 180-min lab)

BIOL 2102. Human Anatomy. (3.0 cr.; =SSA 2102; prereq soph; fall, every year) Same as SSA 2102. Structure of human systems at their organ and cellular level. (two 65-min lect, one 120-min lab) [Note: no elective cr for biol majors or minors]

BIOL 2103. Introduction to Human Physiology. (SCI; 4.0 cr.; prereq 2102 or SSA 2102 or #; spring, every year) Function of human systems at organ, cell, and molecular levels. (three 65-min lect) [Note: no elective cr for biology majors or minors]

BIOL 2111. Cell Biology. (SCI-L; 4.0 cr.; prereq 1101 or 1111, Chem 1102 or #; fall, every year) Cell structure and function. Includes topics pertaining to the chemistry, physiology, structure, and reproduction of plant and animal cells. (three 65-min lect and one 120-min lab)

BIOL 3121. Molecular Biology. (SCI-L; 5.0 cr.; prereq 1111, Chem 2301 or #; fall, spring, every year) Principles and mechanisms of DNA function, protein synthesis, and gene regulation in prokaryotes and eukaryotes. Genetic engineering and evolution at the molecular level. (two 100-min lect, 180-min lab, additional lab time arranged)

BIOL 3131. Ecology. (SCI-L; 4.0 cr.; prereq Biol 2101 or EnSt 2101, Stat 1601 or 2601, or #; fall, every year) Basic principles and models of population biology, community structure and function, and ecosystem dynamics. Lab exercises emphasize field work, techniques for characterizing local plant and animal communities, and experimental investigation of topics such as competition and behavioral ecology. (two 65-min lect, one 180-min lab and field study; weekend field trip required)

BIOL 3700. Biological Communication I. (1.0 cr.; prereq Biol 2101, 2111; fall, spring, every year) Finding and utilizing sources of biological information. Modern techniques for searching the biological literature, as well as reading and interpreting those sources. Principles of
BIOL 3701. Biological Communication II. (1.0 cr.; prereq 3700; #; fall, spring, every year) Writing, editing, and revising an extensive review paper on a biological topic under the mentorship of a faculty member. Multiple drafts and revisions are expected.

BIOL 4003. Neurobiology. (4.0 cr.; prereq 2111; fall, offered periodically) Survey of general principles of neuronal function and formation. Emphasis on comparative aspects of simple nervous systems.

BIOL 4071. Flora of Minnesota. (4.0 cr.; prereq Biol 2101; summer, offered periodically) Identification, ecology, and conservation of vascular plants found in Minnesota. Labs and field trips emphasize plant identification and anatomy.

BIOL 4103. Cancer Biology. (4.0 cr.; A-F only; prereq 2111; spring, offered periodically) Examining cancer processes from a genetic, molecular, and developmental perspective, identifying the cellular events behind uncontrolled growth and metastasis, cell cycle control, apoptosis, and cell signaling and signal transduction. Exploring genetic and environmental factors that can induce cancers.

BIOL 4111. Microbiology. (4.0 cr.; prereq 2111, or coreq 3131 or #; spring, every year) The biology of pathogenesis and the treatment and prevention of infectious disease. Emphasis on prokaryotic microbes and viruses. (Two 65-min lect, one 180-min lab)

BIOL 4121. Herpetology. (4.0 cr.; prereq Biol 2101 or EnSt 2101 or #; spring, even years) Survey of amphibians and reptiles, including their evolution, systematics, identification, behavior, ecological relationships, and contemporary problems associated with human activities. (Two 65-min lect, one 180-min lab or field study)

BIOL 4122. Virology. (4.0 cr.; prereq 3121 or #; spring, even years) An overview of virology. Consider virus biology. Consider evolutionary origins of viruses and compare structure, genome organization, replication strategies, and other features of common and unique viruses. (Two 100-min lect)

BIOL 4131. Vertebrate Natural History. (4.0 cr.; prereq Biol 2101 or EnSt 2101 or #; spring, odd years) Survey of vertebrates, including their evolution, systematics, and ecological relationships. (Two 65-min lect, one 180-min lab or field study)

BIOL 4151. Entomology. (4.0 cr.; prereq Biol 2101 or EnSt 2101 or #; fall, even years) Structure, life histories, habits, and classification of common families of insects, including their economic significance. (Two 65-min lect, 180-min lab)

BIOL 4161. Evolution. (4.0 cr.; prereq Biol 2101, 2111 or #; spring, even years) Survey of the history, evidence, and mechanisms of organic evolution. (Three 65-min lect)

BIOL 4172. Plant Systematics. (4.0 cr.; prereq 2101 or EnSt 2101 or #; spring, odd years) Survey of vascular plant taxa, with an emphasis on the flowering plant families and their evolutionary relationships. Lab emphasizes use of keys for identification of Midwestern plant families and genera. (Two 65-min lect, 180-min lab)

BIOL 4181. Developmental Biology. (4.0 cr.; prereq 2111; 4312 recommended; fall, spring, offered periodically) Survey of general concepts in developmental biology, emphasizing molecular mechanisms of positional information, pattern formation, and cellular interactions. Stresses comparative aspects of developmental processes, and the role of development in evolution. (Two 65-min lectures, one 180-min lab)

BIOL 4191. Freshwater Biology. (4.0 cr.; prereq Biol 2101 or EnSt 2101, 2111 and prereq or coreq Stat 1601 or 2601 or #; fall, odd years) Structure, function, and biota of freshwater ecosystems, including lakes, streams, and wetlands. Lab emphasizes independent research and field study in local habitats. (Two 65-min lect, one 180-min lab; all day field trip required)

BIOL 4211. Biochemistry. (4.0 cr.; prereq Chem 2302 or Chem 2304, or coreq Biol 3121, or #; fall, every year) Structures, functions, and biochemical transformations of proteins, carbohydrates, and lipids. (Three 65-min lect) Optional lab offered. See Biol 4611.

BIOL 4231. Immunology. (4.0 cr.; prereq or coreq 3121 or #; spring, offered periodically) An introduction to the cellular and molecular aspects of immunology that are involved in health and disease. Students consider these concepts through discussion of primary literature and clinical scenarios.

BIOL 4301. Plant Biology. (4.0 cr.; prereq Biol 2101, 2111 or #; fall, even years) Descriptive and experimental study of plants. Anatomy, development, physiology, secondary compounds, evolution, human uses of plants. (Two 65-min lect, one 180-min lab)

BIOL 4311. Conservation Genetics. (4.0 cr.; prereq Biol 2101 or #; Stat 1601 or 2601 recommended; fall, offered periodically) Introduction to theory of population differentiation and gene flow; applications to managing and recovering rare species. Adaptive and neutral models, linkage disequilibrium, effective population size, inbreeding depression, population genetic structure. Labs use computers to model genetic changes in populations and analyze genetic structure. (Two 100-min lect, one 120-min lab)

BIOL 4312. Genetics. (4.0 cr.; +[BIOL 3101]; prereq 2111 or #; spring, every year) Principles and mechanics of inheritance and variation, including cytological, organismal, and population genetics; mechanisms of evolution; and the genetic problems of humans. (Two 65-min lect, 180-min lab)

BIOL 4321. Animal Physiology. (4.0 cr.; prereq 2111; spring, offered periodically) Functions of animal structures as they relate to coping with different environmental situations. (Two 65-min lect, one 120-min lab)

BIOL 4332. Ecology of Agriculture and Forestry. (ENVT; 4.0 cr.; prereq 3131 or #; spring, even years) Global and regional aspects of agriculture, forestry, and biofuel production in the context of community and ecosystem ecology. Nutrient cycling, carbon management, biodiversity, and the ecological challenges of feeding and providing energy to 9-12 billion people in the face of global climate change. Emphasis on analysis of primary literature. Short local field trips required.

BIOL 4333. Biogeochemistry and Global Change. (4.0 cr.; prereq 3131 or #; spring, odd years) Cycling of elements vital to life, particularly, nitrogen (N), phosphorus (P), and carbon (C). Focus on understanding the feedback between physical and ecological processes and the biologically driven coupling of nutrient cycles. Analysis of humans as drivers of change in the biogeochemistry of ecosystems. Heavy emphasis on current primary literature.

BIOL 4351. Conservation Biology. (4.0 cr.; prereq Biol 2101 or EnSt 2101, coreq or prereq Biol 3131, Biol 3700 or #; fall, odd years) Application of demographic and genetic models to protect biodiversity, including planning for uncertainty. Population viability, inbreeding depression, contemporary evolution, design and management of reserves, and invasive species. Lab exercises include field trips and computer modeling of endangered species. (Two 65-min lect, one 180-min lab)

BIOL 4600. Practicum in Biology. (1.0-2.0 cr. [max 4.0 cr.]; S-N only; fall, spring, every year) Supervised experience of selected activities; lab preparation/management, greenhouse care/management, animal care, curating museum/herbarium collections. Repeatable with different projects or activities. [Note: no elective cr for biol majors or minors]

BIOL 4611. Biochemistry Lab. (1.0 cr.; prereq or coreq 4211; fall, every year) Experiments using the major separation and analytical techniques of biochemistry, including centrifugation, chromatography, electrophoresis, immunochemistry, and spectrophotometry. (One 180-minute lab)

BIOL 4901. Senior Seminar. (1.0 cr.; prereq 3701, sr or #; required of all sr biology majors; full-year course begins fall sem; fall, every year) Seminar series on selected biological topics. Includes preparation and presentation of a seminar based on original research and/or scientific literature. Enroll in fall, continues all year.

BIOL 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.
CHEM 1001. Chemistry for the Curious Citizen: The Role of Chemistry in the Environment and Everyday Life. (SCI-L; 4.0 cr.; =CHEM 1801; summer, offered periodically) The central nature and relevance of chemistry to the environment and everyday life. Air quality, the ozone layer, global warming, energy resources, acid rain, and nutrition. Discussion and debate of current events related to these topics. Select readings on significant historical chemical discoveries in these areas that still resonate today. Basic chemistry lab principles and techniques. This course is intended for non-science majors. [Note: may not count toward chem major or minor]

CHEM 1101. General Chemistry I. (SCI-L; 5.0 cr.; prereq Math 0901 or placement beyond Math 0901 using ACT/placement exam score; fall, every year) Scientific method, measurements, nomenclature, stoichiometry, atomic and molecular structure, thermochemistry, chemical periodicity, introduction to chemical bonding, and properties of common elements and ions. Development of scientific reasoning and problem-solving skills. Laboratory exercises concomitant with these topics. (three 65-min lect, 180 min lab)

CHEM 1102. General Chemistry II. (SCI-L; 5.0 cr.; prereq 1101; spring, every year) Continuation of Chem 1101. Chemical bonding, states of matter, solutions, acid-base chemistry, chemical equilibrium, oxidation-reduction reactions, kinetics, thermodynamics, quantum theory, nuclear chemistry, organic chemistry, and biochemistry. Lab exercises concomitant with these topics. (three 65-min lect, 180 min lab)

CHEM 1553. Chemistry, Empirical Inquiry, and Cultural Confluence in Thailand. (IP; 4.0 cr.; prereq 1102 or #; summer, offered periodically) Science is seen as objective and equally applicable all over the world. This doesn't mean that science doesn't benefit from a diversity of cultural points of view among scientists. Topics included are molecular structure, thermodynamics, equilibrium, and spectroscopy. These topics, with their universal relevance in chemistry, also provide a doorway for cultural exchange. This course offers an opportunity to study chemistry while immersed in the culture of Thailand, a Southeast Asian country never colonized by a western power. The course takes place on the campuses of Mahasarakham University, Kasetsart University, and cities, villages, and National Parks in Thailand. Discussion and lab activities are designed to build on topics from Chem 1102 and be culturally relevant and collaborative between students and faculty from UMM and universities in Thailand. The course provides a balance of perspectives both eastern and western, modern and traditional.

CHEM 1801. Science Savvy in Our Modern World. (IC; 2.0 cr.; =CHEM 1001; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) If students and chemistry were in a Facebook relationship, the status would be "it's complicated." Some students love science and some love to hate it. "America's Finest News Source," The Onion, has repeatedly reported that "science is hard" but are they right? Chemistry is too important in our modern world to be ignored simply because it's complicated or perceived to be hard. Some science is hard but just because a science topic is complex doesn't mean that it can only be understood by rocket scientists. Through written reflections and discussions based on mainstream science books and current event articles, students explore the connections between science and society. The course helps students to understand the role of experts and bias in the reporting. The course also helps students to become more science literate about the green and sustainable activities on campus. Ultimately, this course fosters a relationship where students both need and want to be engaged with chemistry.

CHEM 1993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 2301. Organic Chemistry I. (SCI; 4.0 cr.; prereq 1102; fall, every year) Introduction to the structure and reactivity of organic molecules; nomenclature and functional groups; stereochemistry; mechanisms of substitution and elimination pathways; physical organic chemistry; introduction to synthetic strategy; fundamentals of spectroscopic techniques.

CHEM 2302. Organic Chemistry II. (SCI; 4.0 cr.; =CHEM 2304; prereq C or better in 2301, coreq 2321 or # for chem majors; spring, every year) Continuation of topics from Chem 2301; spectroscopy; chemistry of polyenes, aromatic systems, and amines; enol and enolate chemistry; free-radical chemistry; retrosynthetic analysis; special topics.

CHEM 2304. Organic Chemistry II with a Biological Emphasis. (SCI; 4.0 cr.; =CHEM 2302; prereq C or better in 2301, Biol 2111 or #; spring, offered periodically) Continuation of topics from Chem 2301, with an emphasis on compounds and reactions of biological interest. Topics include spectroscopy, structure and reactivity of aromatic compounds, phosphonyl and acyl group transfer, nucleophilic carbonyl addition, reactions involving enolate and enamine intermediates, coenzyme chemistry, electrophilic addition, beta elimination, oxidation and reduction of organic compounds, and reactions involving free radical intermediates.

CHEM 2311. Organic Chemistry Lab I. (1.0 cr.; prereq coreq 2301 or #; fall, every year) Development of lab techniques in organic chemistry; experimental problem-solving. (3 hrs lab)

CHEM 2321. Introduction to Research I. (1.0 cr.; spring, every year) An on- or off-campus undergraduate research experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum. Interdisciplinary approach to experiment design and analysis of data. Synthesis of organic, organometallic, and/or inorganic compounds, with emphasis on purification and characterization using advanced techniques and instrumental methods. Instruction in use of the scientific literature and scientific communication. Begin research project with faculty mentor. (6 hrs lab)

CHEM 2322. Introduction to Research II. (1.0 cr.; spring, every year) Continue research with faculty mentor. Experiment design and analysis of data. Instruction in the use of the scientific literature and oral and written scientific communication. (6 hrs lab) Prereq-2321, coreq 2302 or 2304

CHEM 2993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 2994. Directed Research. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus undergraduate research experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 3101. Analytical Chemistry. (SCI-L; 4.0 cr.; prereq 1102; fall, every year) The application of chemical equilibria to chemical analysis with emphasis on the fundamental quantitative aspects of analytical chemistry. Acid-base, oxidation-reduction, and complexometric titrations, introduction to electrochemical and spectrophotometric analyses and separations. (3 hrs lect, 3 hrs lab)

CHEM 3301. The Chemistry of Sustainable Energy. (SCI; 4.0 cr.; =ESCI 3301; prereq 2302 or 2304 or #; fall, even years) Same as ESCI 3301. The fundamental chemical concepts underlying energy sources. Topics include: energy basics, fossil fuels, "sustainable" energy sources, biomass, solar voltaics, hydrogen fuel cells, and nuclear energy.

CHEM 3401. Polymer Chemistry and the Environment. (SCI; 4.0 cr.; =ESCI 3401; prereq 2302 or 2304 or #; spring, even years) Same as ESCI 3401. Introduction to many traditional topics in polymer chemistry including those with a connection to elements of the environment and environmental science such as the preparation of polymers from...
CHEM 4311. Polymer Chemistry Lab. (1.0 cr.; prereq 2322, coreq 3401 or ESci 3401 or #; spring, even years) Synthesis, characterization, and physical properties of polymers with an emphasis on sustainable polymer chemistry. (3 hrs lab)

CHEM 4501. Advanced Inorganic Chemistry. (4.0 cr.; prereq 4701 or #; fall, odd years) Lab experiments in inorganic/organometallic chemistry illustrating synthetic and spectroscopic techniques. (3 hrs lab)

CHEM 4551. Theoretical Chemistry. (4.0 cr.; prereq or coreq 3502 or #; spring, offered periodically) Discussion of the biochemical aspects of neurodegenerative diseases, addiction, and poisons such as the roles of metal ions and non-covalent interactions in protein folding and function. The course involves extensive reading and discussion of primary literature with a strong focus on data interpretation and experimental design.

CHEM 4553. Impermanence and Equilibrium in Chemical Thermodynamics and Buddhism in Thailand. (4.0-6.0 cr.; prereq 3501 or #; 4 credits for may session only; 6 credits if continuing into June in Morris; summer, offered periodically) Study of the preparation of biologically active molecules, emphasizing the application of transition metal chemistry to modern synthetic methods. (0.5 cr.; A-F only; prereq 3901; fall, every year) Introduction to quantum theory. Atomic and molecular structure. Group Theory. Introduction to statistical mechanics. Chemical dynamics. Topics drawn from the liquid and solid states, advanced kinetics, electrochemistry, and surfaces. (3 hrs lab)

CHEM 3901. Chemistry Seminar I. (0.5 cr.; A-F only; prereq 2321; spring, every year) Presentations by faculty, guest speakers, and students on topics of current research interest. Students are required to present one seminar for the Chem 3901-4901 sequence. (Note: required of all chem majors; may not count toward chem minor)

CHEM 3411. Polymer Chemistry Lab. (1.0 cr.; prereq 2322, coreq 3401 or ESci 3401 or #; spring, even years) Synthesis, characterization, and physical properties of polymers with an emphasis on sustainable polymer chemistry. (3 hrs lab)

CHEM 3994. Directed Research. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 4411. Instrumental Analysis. (5.0 cr.; prereq 3101; spring, odd years) Principles of chemical instrumentation and instrumental methods of analysis; extensive lab work using chromatographic, spectrophotometric, and electrochemical methods of analysis. (3 hrs lect, 6 hrs lab)

CHEM 4351. Bioorganic Chemistry. (4.0 cr.; prereq 2302 or 2304, Biol 4211; spring, every year) Discussion of the theory of enzyme catalysis and catalytic antibodies, experimental determination of catalytic mechanisms for a variety of organic reactions in biological systems, and elucidation of biosynthetic pathways. Involves extensive reading in the primary literature.

CHEM 4352. Synthesis. (4.0 cr.; prereq 2302 or 2304; fall, odd years) Study of the preparation of biologically active molecules, emphasizing the application of transition metal chemistry to modern synthetic methods.

CHEM 4353. Synthesis Laboratory. (1.0 cr.; prereq 4352 or #; fall, spring, offered periodically) Modern organometallic synthetic methods applied to the preparation of small organic molecules. Preparation, purification, analysis, and identification of synthetic products. Scientific record-keeping and literature searching. (3 hrs lab)

CHEM 4354. Biochemistry of Neurological Disorders. (4.0 cr.; prereq 2321 or Biol 3700, Biol 4211 or #; spring, offered periodically) Discussion of the biochemical aspects of neurodegenerative diseases, addiction, and poisons such as the roles of metal ions and non-covalent interactions in protein folding and function. The course involves extensive reading and discussion of primary literature with a strong focus on data interpretation and experimental design.

CHEM 4551. Theoretical Chemistry. (4.0 cr.; prereq or coreq 3502 or #; spring, offered periodically) Quantum theory of molecules. Statistical thermodynamics; Gibbssian ensembles; applications.

CHEM 4552. Molecular Spectroscopy. (3.0 cr.; prereq 2302 or 2304, 3101 or #; spring, even years) Interaction of molecules and electromagnetic radiation. Spectroscopic determination of molecular structure. Operation of spectrometers and spectrophotometers.

CHEM 4553. Impermanence and Equilibrium in Chemical Thermodynamics and Buddhism in Thailand. (4.0-6.0 cr.; prereq 3501 or #; 4 credits for may session only; 6 credits if continuing into June in Morris; summer, offered periodically) Study of the preparation of biologically active molecules, emphasizing the application of transition metal chemistry to modern synthetic methods. (0.5 cr.; A-F only; prereq 3901; fall, every year) Introduction to quantum theory. Atomic and molecular structure. Group Theory. Introduction to statistical mechanics. Chemical dynamics. Topics drawn from the liquid and solid states, advanced kinetics, electrochemistry, and surfaces. (3 hrs lab)

CHEM 3901. Chemistry Seminar I. (0.5 cr.; A-F only; prereq 2321; spring, every year) Presentations by faculty, guest speakers, and students on topics of current research interest. Students are required to present one seminar for the Chem 3901-4901 sequence. (Note: required of all chem majors; may not count toward chem minor)

CHEM 3994. Directed Research. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 4311. Polymer Chemistry Lab. (1.0 cr.; prereq 2322, coreq 3401 or ESci 3401 or #; spring, even years) Synthesis, characterization, and physical properties of polymers with an emphasis on sustainable polymer chemistry. (3 hrs lab)

CHEM 4501. Advanced Inorganic Chemistry. (4.0 cr.; prereq 4701 or #; fall, spring, summer, offered periodically) Structure and reactions of coordination compounds, inorganic cages and clusters, lanthanide and actinide series. Nanoparticles, bioinorganic topics, and other trends in the field.

CHEM 4901. Chemistry Seminar II. (0.5 cr.; A-F only; prereq 3901; fall, every year) Continuation of Chemistry Seminar I. This is a full-year course. Students must attend year-round and present one of the seminars. [Note: required of all chem majors; may not count toward chem minor; full-year course begins fall semester]

CHEM 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CHEM 4994. Directed Research. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus undergraduate research experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Chinese (CHN)

Division of Humanities

CHN 1001. Beginning Modern Chinese I. (4.0 cr.; fall, every year) First semester of a two-semester sequence in first-year modern standard Chinese (Mandarin) for students who have no previous exposure to the Chinese language. Introduction to the sounds of Mandarin, basic grammar, vocabulary, and the Chinese writing system.

CHN 1002. Beginning Modern Chinese II. (FL 4.0 cr.; prereq 1001 or #; spring, every year) Second semester of the two-semester sequence in first-year Chinese. Designed for those who have completed first-semester Chinese or who have equivalent preparation. Introduction to additional modern standard Chinese (Mandarin) grammar, vocabulary, and sentence structures. By the end of the semester, students should be able to recognize some of the Chinese characters, write about part of them from memory, conduct simple conversations, and read simple Chinese texts on general topics.
Communication, Media, and Rhetoric (CMR)
Division of Humanities

CMR 1042. Public Speaking and Analysis. (E/CR; 4.0 cr.; summer, offered periodically) Public address theories, practices, and analysis.

CMR 1052. Introduction to Public Speaking. (E/CR; 2.0 cr.; fall, spring, every year) Activities, assignments, and exercises related to public address/public speaking in a variety of speech settings.

CMR 1062. Introduction to Interpersonal and Group Communication. (HUM; 4.0 cr.; fall, every year) Activities, assignments, and exercises related to interpersonal and group communication in public and private settings including dating, family, and work.

CMR 1101. Introduction to Theories of Communication, Media, and Rhetoric. (HUM; 4.0 cr.; spring, every year) A survey of the field of study. Students learn the history, theories, and contexts of communication study that prepare them for upper-division courses.

CMR 1388. College Newspaper Experience. (1.0 cr. [max 2.0 cr.]; prereq #; fall, spring, every year) Supervised experience of selected learning activities to be done in conjunction with an appointment working at the campus newspaper.

CMR 1389. College Radio Experience. (1.0 cr. [max 2.0 cr.]; prereq #; fall, spring, every year) Supervised experience of selected learning activities to be done in conjunction with an appointment working at the campus radio station.

CMR 1801. Legal Argument and Free Speech: Ready to Become a Supreme Court Justice?. (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Examination of the development of legal argument in Supreme Court decisions dealing with free speech. Read Supreme Court cases, write opinions, speak to a mock Supreme Court, listen to arguments, and analyze the issues that define the ability to communicate in this country.

CMR 1802. Interpersonal and Intercultural Conflict Communication. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) An IC course in conflict communication. Students come to understand common sources of conflict, roles of culture in the perceptions of interpersonal conflict, and more successful approaches to addressing conflict through communication in order to sustain valued interpersonal and professional relationships with members of diverse cultures.

CMR 1803. Not Just For Laughs: Humor in Interpersonal Communication and the Media. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Exploration of the dimensions of humor in interpersonal and mediated communication. Examination of humor in interpersonal situations and the media. Students explore a variety of humorous content, analyze if/how/why it is effective, create their own humorous content, and learn about using humor effectively in everyday communication.

CMR 2311. Media History and Society. (SS; 4.0 cr.; fall, spring, offered periodically) Examination of humor in interpersonal communication in order to sustain valued approaches to addressing conflict through humor, roles of culture in the perceptions of interpersonal conflict, and more successful approaches to addressing conflict through humor effectively in everyday communication.

CMR 2311. Media History and Society. (SS; 4.0 cr.; fall, spring, offered periodically) Examines the historical and ongoing development of the relationship of media, culture, and the public. Traces and explores the developments of various communication technologies, their impacts and consequences, and their relationships to notions of "the public."

CMR 2321. Digital Media Production. (HUM; 4.0 cr.; fall, spring, offered periodically) Basic theories and practice: equipment, procedures, and skills associated with planning, writing for, and producing mediated messages. Lectures, studio projects, class critiques.

CMR 2411. Health Communication. (HUM; 4.0 cr.; fall, offered periodically) A survey of the critical role communication plays in health promotion, specifically in the area of doctor-patient interaction and health campaigns. Communicative issues include the social construction of health, the role of culture in health and healing, and social support.

CMR 2421. Business and Professional Communication. (E/CR; 4.0 cr.; prereq 1052, 1062 or #; spring, offered periodically) Developing proficiency in communication skills in business and professional contexts. Preparing, selecting, organizing, designing, and delivering messages in business situations. Analyzing meeting/group facilitation, interviewing, and professional presentations.

CMR 3101. Rhetorical History and Theories: Pre-Socratic to Modern Periods. (IP; 4.0 cr.; prereq 1101 or #; fall, every year) Rhetoric from the classical theories of the older Sophists, Aristotle, and Cicero to the modern theories of Blair, Campbell, and Whately.

CMR 3111. Contemporary Rhetorical Theory and Criticism. (HUM; 4.0 cr.; prereq 1101 or #; fall, spring, offered periodically) Detailed study of the development of contemporary rhetorical theory, with particular emphasis placed on the use of those theories in the development of rhetorical criticism.

CMR 3123. Rhetorical Criticism and Speeches that Changed the World. (HUM; 4.0 cr.; prereq 1101 or #; spring, offered periodically) Detailed study of the theoretical tradition of human communication. Focuses on social scientific and humanities theories used to explain social interaction. Provides general foundation on various traditions of inquiry as well as qualitative and quantitative methods.

CMR 3124. Rhetoric of Comic Art: Analysis and Creation. (HUM; 4.0 cr.; prereq 1101 or #; fall, offered periodically) Study of intercultural communication from an interpersonal and group perspective.
CMR 3421. Organizational Communication Theory and Research. (SS; 4.0 cr.; prereq 1101 or #; spring, offered periodically) Study of organizational communication, including small group perspectives.

CMR 3432. Communication Research Methods. (HUM; 4.0 cr.; prereq 1101 or #; fall, offered periodically) Elements/methods of communication research. Use of quantitative/qualitative research methodologies, basic research design, and data collection methods to inform decision making.

CMR 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CMR 4122. Rhetoric of Picture Books, Prose and Picture. (HUM; 4.0 cr.; prereq 1101 or #; fall, offered periodically) Explore and analyze picture books for intended and unintended messages. Examine the rhetorical construction of pictures and the rhetorical impact of the intersection between picture and prose. Gain a deeper sensitivity to the formerly unseen rhetorical dimensions of the symbols that surround them.

CMR 4152. Advanced Public Speaking. (HUM; 4.0 cr.; prereq 1052 or #; fall, every year) A study of rhetorical argument design and evaluation. Students analyze and critique arguments, as well as plan and present formal speeches.

CMR 4341. New Media Technologies. (HUM; 2.0 cr.; prereq 1101 or #; spring, offered periodically) Examination of the impact of "new media" on current/future cultures; the structure/processes of media and global society in a comparative context; ways new media change how people communicate, distribute, and process information.

CMR 4411. Advanced Interpersonal Communication. (4.0 cr.; prereq 1101 or #; spring, offered periodically) Applying a variety of approaches to understanding interpersonal communication.

CMR 4800. Directed Experience in Teaching Communication, Media, and Rhetoric. (1.0-4.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year) Practice as facilitators in the introductory-level communication, media, and rhetoric courses; weekly seminar sessions focus on method, planning, and problems in communication, media, and rhetoric instruction.

CMR 4900. Communication, Media, and Rhetoric Seminar I. (1.0 cr.; A-F only; prereq 1052, 1062, 1101 or sr status with #; fall, every year) Familiarizes students with the literature of the field, including ethical and social implications of communication studies. Students analyze various articles and similarly published works, synthesize contents, and construct a research proposal for a project to be completed as a senior capstone experience.

CMR 4901. Communication, Media, and Rhetoric Seminar II. (HUM; 3.0 cr.; A-F only; prereq 4900, or sr status in the major, #; spring, every year) Completion of capstone experience for majors. Students conduct a project of original study and present their findings in written and oral form.

CMR 4983. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

### Computer Science (CSCI) Division of Science and Mathematics

CSCI 1001. Introduction to the Computing World. (M/SR; 2.0 cr.; fall, offered periodically) Basic hardware and software concepts, elementary data representation, problem solving techniques, algorithm development, introduction to web development, and methods for separation of content and presentation (such as HTML and CSS). [Note: no elective cr for Csci majors or minors]

CSCI 1201. Introduction to Digital Media Computation. (M/SR; 4.0 cr.; spring, every year) Using images, sounds, and movies to introduce problem solving, data representation, data manipulation, and programming principles including recursion. Introduction to basic ideas in hardware, software, and computing.

CSCI 1251. Computational Data Management and Manipulation. (M/SR; 4.0 cr.; spring, every year) Introduction to principles and practices of computational data management such as using advanced spreadsheet operations, designing and implementing algorithms to summarize and transform data sets, understanding organization of databases, writing and executing simple database queries, and creating effective data visualizations. Topics include basic issues of information security and introduction to modern technologies that support collaboration. [Note: no elective credit for Csci majors or minors]

CSCI 1301. Problem Solving and Algorithm Development. (M/SR; 4.0 cr.; fall, every year) Introduction to different problem solving approaches, major programming paradigms, hardware, software, and data representations. Study of the functional programming paradigm, concentrating on recursion and inductively-defined data structures. Simple searching and sorting algorithms.

CSCI 1302. Foundations of Computer Science. (M/SR; 4.0 cr.; spring, every year) Basic proof techniques, propositional and predicate logic, induction and invariants, program correctness proofs, simple Big-Oh analysis of algorithms, set theory, introductory graph theory, and basic summations.

CSCI 1801. The Design of Everyday Technologies. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Discussion and examination of examples of everyday things, issues surrounding the design of technologies for people, and the impacts of new technologies and tools on people in society. Discussion of how values and ethics are manifested in design. Study of design techniques and approaches with an emphasis on promoting design literacy. Includes discussion, readings, presentations, and a project. Requires attending two activities outside of class, a poster session, and a presentation.

CSCI 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CSCI 2101. Data Structures. (M/SR; 5.0 cr.; prereq 1201 or 1301 or #; fall, every year) Introduction to data structures, including stacks, queues, trees, and graphs; implementation of abstract data types and introduction to software testing, using object-oriented techniques and reusable libraries. (4 hrs lab; 2 hrs lab)

CSCI 2701. Introduction to Data Science. (M/SR; 4.0 cr.; +STAT 2701; prereq 1201 or 1251 or 1301, Stat 1601 or Stat 2601 or Stat 2611 or #; spring, every year) Same as Stat 2701. Introduction to data science and informatics and their application to real world scenarios. Computational approaches to data types; database creation including technologies such as SQL/no-SQL; data visualization; data reduction, condensation, partitioning; statistical modeling; and communicating results.

CSCI 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CSCI 3402. Computing Systems: Concepts. (3.0 cr.; prereq 1302 and 2101 or #; spring, every year) Overview of computing systems, operating systems, and networks. Sources of complexity. Fundamental abstractions such as memory, processing, and communication; memory management and data storage; threads, processes, race conditions and deadlock; and inter-process and inter-computer communication. Modularity and organization; virtualization; protection and security; performance.

CSCI 3403. Computing Systems: Practicum. (2.0 cr.; prereq 1302 and 2101 or #; fall, every year) Lab experience with key computing systems tools and concepts. Command-line tools; shell and system scripting; system programming. Pointers and explicit memory management. Digital logic, gates, electronics, and microcomputers. Network organization and communication; client-server programming.
Processes and threads; parallel and distributed computing. Performance and profiling.

CSCI 3501. Algorithms and Computability. (M/SR; 5.0 cr.; prereq 1302, 2101 or #; fall, every year)
Models of computation (such as Turing machines, deterministic and non-deterministic machines); approaches to the design of algorithms, determining correctness and efficiency of algorithms; complexity classes, NP-completeness, approximation algorithms. (4 hrs lect, 2 hrs lab)

CSCI 3601. Software Design and Development. (M/SR; 5.0 cr.; prereq 1302, grade of at least C- in 2101, or #; spring, every year)
Design and implementation of medium- and large-scale software systems. Principles of organizing and designing software throughout their lifetime. Designing for modularity and software reuse; use of libraries. Dynamics of working in groups. Group work on a substantial software project.

CSCI 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

CSCI 4403. Systems: Data Mining. (2.0 cr.; prereq 2101 or #; fall, spring, offered periodically)
An introduction to a new field which tries to solve the problem of how to store (warehouse) and how to extract (mine) valid, useful, and previously unknown data from a source (database or web) which contains an overwhelming amount of information. Algorithms applied include searching for patterns in the data using machine learning, and applying artificial intelligence techniques.

CSCI 4406. Systems: Wireless Data Networks. (2.0 cr.; prereq 3402, 3403 or #; fall, spring, offered periodically)

CSCI 4409. Systems: Programming for Parallel Architecture. (2.0 cr.; prereq 3402, 3403 or #; spring, offered periodically)
Study of programming models, languages, and approaches for parallel computer architectures. Topics include introduction to parallel computing and parallel architectures, approaches to program parallelization, mechanisms for communication and synchronization between tasks, and study of programming language support for parallel computation.

CSCI 4451. Systems: Distributed Systems. (4.0 cr.; prereq 3402, 3403 or #; fall, spring, offered periodically)
An introduction to distributed systems/computing. Topics include processes and threads, physical vs. logical clocks, interprocess communication and coordination, election algorithms, synchronization, distributed task scheduling, distributed shared memory, distributed file systems, and replicated data management.

CSCI 4452. Systems: Computer Networks. (4.0 cr.; prereq 3402, 3403 or #; fall, spring, offered periodically)

CSCI 4453. Systems: Database Systems. (4.0 cr.; prereq 2101 or #; fall, spring, offered periodically)
Introduction to relational, object-relational, and object database systems. Topics include the relational model, SQL and related query languages, JDBC and database applications programming, database design, query processing and optimization, indexing techniques, and transaction management.

CSCI 4454. Systems: Robotics. (4.0 cr.; prereq 2101 or #; fall, spring, offered periodically)
An introduction to robotic systems including robot mechanics, algorithms in robotics, and sensor interfaces for autonomous mobile and arm robots. Concepts of kinematics and coordinate systems, real-time programming, embedded systems, pattern recognition algorithms, simulation environments, and subsumption architecture within the context of robotics applications are explored.

CSCI 4456. Systems: Advanced Operating Systems. (4.0 cr.; prereq 3402, 3403 or #; fall, spring, offered periodically)
Broad exposure to advanced operating systems topics such as process communication, protection, security, memory management, operating system kernels, network operating systems, synchronization, naming, and distributed systems.

CSCI 4457. Systems: Ubiquitous Computing. (4.0 cr.; prereq 3403 or #; fall, spring, offered periodically)
Study of the mechanisms and environments of ubiquitous computing. Topics may include computer and network architectures for ubiquitous computing, mobile computing mechanisms, multimodal interaction, pervasive software systems, location mechanisms, techniques for security and user-authentication, and experimental ubiquitous computing systems.

CSCI 4458. Systems: Bioinformatic Systems. (4.0 cr.; prereq 3403 or #; fall, spring, offered periodically)
Introduction to bioinformatics with an emphasis on computer systems. Possible topics include: utilizing software for genetic sequencing, large-scale data management using databases, algorithms for construction of phylogenetic trees, bioinformatic scripting, and other tools for bioinformatics.

CSCI 4459. Systems: Virtualization and Operating System Administration, Configuration, and Implementation. (4.0 cr.; prereq 3402 and 3403 or #; fall, spring, offered periodically)
The basics of virtualizing hardware and key systems services such as networking. Use of virtualization tools to support an incremental exploration of the installation and configuration of an operating system. More detailed exploration of the implementation details of certain operating system services as time allows.

CSCI 4506. Theory: Fuzzy Logic and Fuzzy Sets. (2.0 cr.; prereq 3501 or #; fall, spring, offered periodically)
Fuzzy logic and fuzzy sets are used in expert systems, controllers, pattern recognition, databases, decision making, robotics, and economics. The basic theory of fuzzy sets and fuzzy logic along with a brief survey of some of the current research. May include presentations and/or a project.

CSCI 4507. Theory: Data Compression. (2.0 cr.; prereq 3501 or #; fall, spring, offered periodically)
Introduction to data compression (including lossless and lossless compression techniques), wavelets, differential encoding techniques (including pulse code and delta modulation), and subband coding with applications to speech, audio, and images. Compression standards such as the CCITT international standard and MPEG audio compression standard.

CSCI 4508. Theory: Algorithm Design. (2.0 cr.; prereq 3501 or #; fall, spring, offered periodically)
Approaches to the design of efficient algorithms for solving a variety of practical problems such as string matching or those that can be modeled on a tree or graph. Techniques studied include dynamic programming, divide and conquer, greedy methods, backtracking, and approximation algorithms.

CSCI 4511. Theory: Artificial Life. (2.0 cr.; prereq 2101 or #; fall, spring, offered periodically)
Introduction to the field of Artificial Life and the phenomena of living systems, with an emphasis on computational approaches to understanding the logic of living systems in artificial environments. Techniques and tools used to better understand the complex information processing that defines living systems, such as agent-based systems, evolutionary computation, cellular automata, and digital simulations.

CSCI 4552. Theory: Advanced Algorithms. (4.0 cr.; prereq 3501 or #; fall, spring, offered periodically)
Techniques for designing and analyzing efficient algorithms to solve a variety of practical problems. Some algorithmic techniques include dynamic programming, greedy methods, and amortized analysis. Other topics include graph algorithms, string matching, approximation algorithms, and NP-Completeness.

CSCI 4553. Theory: Evolutionary Computation and Artificial Intelligence. (4.0 cr.; prereq 2101 or #; fall, spring, offered periodically)
Introduction to Evolutionary Computation as an Artificial Intelligence tool for developing solutions to problems that are difficult to describe precisely or solve formally, as well as
comparisons with other AI techniques. Includes discussions of theoretical background and tools, implementation issues, and applications.

CSCI 4554. Theory: Cryptography. (4.0 cr.; prereq 1302, 2101 or #; fall, spring, offered periodically)

Theory and applications of cryptography. Overview of necessary mathematical concepts. Discussion of algorithms and protocols including public and private key encryption, authentication, and zero knowledge proofs.

CSCI 4555. Theory: Neural Networks and Machine Learning. (4.0 cr.; prereq 1302, 2101 or #; fall, spring, offered periodically)

Study of the underlying theory, structure, and behavior of neural networks and of how neural networks compare to and can be used to supplement other methods of machine learning. Machine learning paradigms such as decision tree learning, inductive learning, reinforcement learning, supervised learning, and explanation-based learning are examined. Analysis of the strengths and weaknesses of various approaches to machine learning. Includes an implementation project.

CSCI 4556. Theory: Computer Graphics. (4.0 cr.; prereq 1302, 2101 or #; fall, spring, offered periodically)

Introduction to basic concepts and algorithms in computer graphics, including three-dimensional geometry and various approaches to modeling three-dimensional scenes. An introduction to transformation and viewing, lighting, shading, texture, and color. Advanced topics may include ray tracing, radiosity, and animation. Students complete several significant projects.

CSCI 4557. Theory: Quantum Computing. (4.0 cr.; prereq 1302, 2101, (3501 or Math 1101 or high math aptitude) or #; spring, offered periodically)

Summarization of relevant mathematical and quantum mechanical concepts. Basic quantum algorithms concepts and simple algorithms are explored, along with Shor's algorithm, Grover's algorithm, and the quantum Fourier transform.

CSCI 4604. Processes, Programming, and Languages: Graphical User Interfaces. (2.0 cr.; prereq 3601 or #; fall, spring, offered periodically)

An exploration into designing Graphical User Interfaces. Aspects of human-computer interaction are discussed along with how to design good user interfaces. Students complete a project using Java’s Swing.

CSCI 4605. Processes, Programming, and Languages: Refactoring. (2.0 cr.; prereq 3601 or #; fall, spring, offered periodically)

Introduction to methodologies for the long-term development and maintenance of software systems. Discussion of methods of fixing errors and extending functionality in a controlled manner that builds on and improves the underlying system design, as well as tools for regression testing to help catch introduced errors. There is a significant programming component as well as change documentation and classroom presentations.

CSCI 4651. Processes, Programming, and Languages: Programming Languages. (4.0 cr.; prereq 2101 or #; fall, spring, offered periodically)

History of programming languages, formal specification of syntax and semantics of programming languages from a variety of paradigms (procedural, functional, logic-programming, object-oriented, and parallel paradigms), modern language features.

CSCI 4652. Processes, Programming, and Languages: Compilers. (4.0 cr.; prereq 3501, 3601 or #; fall, spring, offered periodically)

Program translations from a variety of paradigms. Lexical analysis and parsing techniques, intermediate representations, type checking, code generation, error detection and recovery, optimization.

CSCI 4653. Processes, Programming, and Languages: Software Engineering. (4.0 cr.; prereq 3601 or #; fall, spring, offered periodically)

Examination of software engineering techniques and methodologies. Topics include software life cycle models, analytical and software tools used in software engineering, software metrics, testing techniques, design techniques, planning and estimation methodologies, and issues related to the reusability, portability, and interoperability of software systems. Emphasis on the application of these techniques and methodologies to real world problems. Includes a team-based software development project.

CSCI 4654. Processes, Programming, and Languages: Modern Functional Programming. (4.0 cr.; prereq 1302, 2101 or #; fall, spring, offered periodically)

Survey of concepts, tools, and techniques from the realm of functional programming. Topics include higher order functions, currying, type systems, concurrency models, mechanisms for managing state, and methods of compilation and evaluation such as graph reduction and term rewriting.

CSCI 4655. Processes, Programming, and Languages: Software Design and Development II. (4.0 cr.; prereq 3601 or #; summer, offered periodically)

Design and implementation of a medium-scale software system in an intensive, full-time lab setting where teams use object-oriented tools and agile development processes. Emphasis on the creation, evolution, and maintenance of system design.

CSCI 4656. Processes, Programming, and Languages: Human-Computer Interaction and Interface Design. (4.0 cr.; prereq 2101 or #; fall, spring, offered periodically)

Introduction to the design, evaluation, and implementation of interactive computing systems for human use with a particular emphasis on user interfaces. Possible domains include usability issues for desktop applications, embedded systems, and Web design. Student projects include evaluative studies and sample implementations.

CSCI 4657. Processes, Programming, and Languages: Programming Languages for Client-Server Systems. (4.0 cr.; prereq 3601 or #; fall, spring, offered periodically)


CSCI 4658. Processes, Programming, and Languages: Usability, Design, and Mobile Technologies. (4.0 cr.; prereq 3601 or #; fall, offered periodically)

Design, evaluation, and use of innovative handheld, mobile, and wearable technologies. Topics include needs and issues unique to mobile users, as well as social and organizational impacts of mobile technologies. The course consists of a mix of lectures and seminar-style discussions, with projects incorporating important aspects of design, implementation, and evaluation.

CSCI 4901. Senior Seminar. (1.0 cr.; S-N only; prereq IS 1091 or #, jr or sr; fall, spring, every year)

In-depth survey of literature in a specific computer-related field of the student's choice. Students analyze various articles or similarly published works, synthesize their contents, and present their work formally in a conference setting. Multiple writing and speaking experiences reviewed by faculty and classmates. Requires attendance and presentation at a student conference near the end of the semester in addition to regular class meetings.

CSCI 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Dance (DNCE)

Division of Humanities

DNCE 1321. Introduction to Modern Dance and Ballet. (ART/P; 1.0 cr. [max 2.0 cr.]; S-N only; fall, every year)

Practice in the fundamental movement vocabulary and steps of dance with an emphasis on traditional ballet techniques and modern dance interpretations. Exploration of body awareness through improvisational exercises and compositional studies. Discussion of the cultural origins of style in dance and the role of dance in contemporary life.

DNCE 1322. Introduction to Jazz and Modern Dance. (ART/P; 1.0 cr. [max 2.0 cr.]; S-N only; spring, every year)

Fundamental movement vocabulary and steps of dance from the unique perspective of American Jazz combined with modern dance. Explores body awareness through improvisational exercises and composed studies. Discussion of dance in contemporary life, individual style, and the cultural origins of jazz music and movement.

DNCE 1323. Introduction to Tap Dance. (ART/P; 1.0 cr. [max 2.0 cr.]; S-N only; fall, every year)

Practice in footwork and introduction to vocabulary that forms the basis of the
percussive dance form. Discussion of origins of the dance form, different styles, and relationship to musical structures. Practice in improvisational Tap skills. [Note: Tap shoes required]

**DNCE 1330. Introduction to Dance in Musical Theatre.** (ART/P; 1.0 cr. [max 2.0 cr.]; fall, spring, offered periodically)
A basic study of dance including its vocabulary, technique, and history. Examine the works of choreographers such as Bob Fosse, Agnes de Mille, Michael Bennett, and Twyla Tharp. The class is a combination of movement and discussion.

**DNCE 1331. Ballet I.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1321 or #; fall, spring, every year])
A basic study of ballet including its vocabulary, technique, and history. Appropriate for beginning-level students or students who have completed Dnce 1321 or 1322.

**DNCE 1332. Jazz Dance I.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1322 or #; fall, every year])
A basic study of jazz dance including its technique, history, and applications. Appropriate for beginning-level students or students who have completed Dnce 1321 or 1322.

**DNCE 1333. Modern Dance I.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1321 or 1322 or #; spring, every year])
A basic study of modern dance including alignment, technique, and history. Appropriate for beginning-level students or students who have completed Dnce 1321 or 1322.

**DNCE 1334. Tap Dance I.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1323 or #; spring, every year])
Practice in footwork and advanced beginning vocabulary of this percussive dance form, including opportunities for improvisation. Learn about the origins of the dance form, different styles and how they evolved, and the dance form's relationship to musical structures. Learn and compose Tap dance choreography. [Tap shoes required]

**DNCE 2011. Dance in Society.** (HDIV; 2.0 cr.; spring, odd years)
Through a broad, cross-cultural survey of the different ways in which dance functions in the modern world, students gain an appreciation of the way this art form reflects social and historical experiences. Includes lectures, readings, and opportunities to see dance through videos, observations, and live performances.

**DNCE 2301. Practicum in Dance.** (ART/P; 1.0 cr.; prereq #; spring, every year)
Directed projects in performance and production aspects of dance for the stage. Projects can be focused on either choreography or technical theatre for dance.

**DNCE 2311. Dance Composition.** (ART/P; 2.0 cr. [max 8.0 cr.; fall, spring, offered periodically])
Introduction to the basic elements of choreography, including the use of space, time, energy, abstraction, motif and development, and the selection of music. Using improvisation and assigned movement problems to learn the process of crafting solo and group choreography.

**DNCE 2320. Contemporary and Modern Technique and Choreography.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1321 or #; fall, spring, offered periodically)
Builds upon basic dance vocabulary with movement exercises drawn from traditional schools of modern dance technique. Dancers examine contemporary technique and place an emphasis on aesthetic and expressive qualities that lead to performance and discussion.

**DNCE 2331. Ballet II.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1331 or #; fall, every year])
A low intermediate-level study of classical ballet. Emphasis on advancing technical skill through conditioning and performance of ballet steps and combinations. [Note: ballet slippers required]

**DNCE 2332. Jazz Dance II.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1330 or #; spring, every year])
Builds upon basic dance vocabulary with emphasis on the movement vocabulary of jazz dance. Emphasis on African dance roots and stylistic variations in contemporary jazz dance forms. Includes a performance experience.

**DNCE 2333. Modern Dance II.** (ART/P; 1.0 cr. [max 2.0 cr.; prereq 1333 or #; fall, every year])
Builds upon basic dance vocabulary with movement exercises drawn from traditional schools of modern dance technique (Wigmam/Holm, Graham/Humphrey/Limon, Horton, Cunningham). Emphasis is on advancing technical skills through conditioning, improvisation, and movement combinations. Includes a performance experience.

**DNCE 2993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, summer, every year])
A learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum such as dance history, choreography and directing, dance education for children.

**DNCE 3011. Dance History.** (FA; 4.0 cr.; prereq 2011 or #; spring, offered periodically)
Identify significant developments in the history of Dance. Trace the roots of Ballet and Modern Dance and their impact on dance as performance art in Western society. Examine the history of select styles of non-Western dance and research major figures in dance history.

**DNCE 3993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, summer, every year])
A learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum such as dance history, choreography and directing, dance education for children.

**Economics (ECON)**
**Division of Social Sciences**

**ECON 1103. Essentials of Economics.** (SS; 3.0 cr.; fall, spring, every year)
The first half of the course develops theories related to individual and firm decision-making. Students will learn how consumers and producers respond to price changes, how price is determined in the market, concepts of elasticity, gains from trade and how different types of firms maximize profit. The latter half of the course will introduce the theories related to aggregate economy. Specific attention will be given to models that explain business cycles fluctuations and policy initiatives to ameliorate them.

**ECON 1111. Principles of Microeconomics.** (SS; 4.0 cr.; prereq high school algebra or #; fall, spring, every year)

**ECON 1112. Principles of Macroeconomics.** (SS; 4.0 cr.; prereq high school algebra or #; fall, spring, every year)
Introduction to basic economic problems, concepts, and theoretical models. U.S. economic institutions and the economic organization of society. The role of markets in the production and distribution of societal resources. Measurement of economic performance; national income, inflation, and unemployment; competing macroeconomic theories and stabilization policies.

**ECON 1993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year])
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**ECON 2993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year])
A learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**ECON 3005. Experimental and Behavioral Economics I.** (SS; 2.0 cr.; prereq 1111, 1112, Math 1101 or #; fall, spring, offered periodically)
Introduction to economic experiments as controlled tests of microeconomic and game-theoretic behavioral predictions. In-class economic experiments, elements of non-cooperative game theory, results of market and social preference experiments, and empirical applications.

**ECON 3006. Experimental and Behavioral Economics II.** (SS; 2.0 cr.; prereq 3005 or #; fall, spring, offered periodically)
Advanced concepts and applications in experimental and behavioral economics.
ECON 3007. Environmental and Natural Resource Economics I. (ENVT; 2.0 cr.; prereq 1111 or #; fall, spring, offered periodically)
An overview of "brown" pollution and "green" sustainability issues in environmental and natural resource economics. Emphasis on the role of market failures in causing environmental problems and on the design of market mechanisms and incentive regulations to solve those problems. Analysis of current federal policy in the areas of water and air pollution.

ECON 3008. Environmental and Natural Resource Economics II. (ENVT; 2.0 cr.; prereq 3007 or #; fall, spring, offered periodically)
The economic analysis of sustainability, focusing on market designs to discourage over-exploitation of both renewable and exhaustible natural resources. Topics include markets for water, fisheries, and energy.

ECON 3009. Political Economy. (SS; 4.0 cr.; [ECON 3004, ECON 3003]; prereq 1111, 1112 or #; spring, offered periodically)
The historical evolution, methodological relevance, and basic structure of the modern capitalist economy, including the dynamics of capital accumulation, economic crisis, transformation and regulating mechanism of contemporary capitalism, and hegemonic tendency of economy over polity and other aspects of life in contemporary society.

ECON 3011. Cost-Benefit Analysis. (ENVT; 4.0 cr.; prereq 1111; spring, offered periodically)
Cost-Benefit Analysis is a widely used method for comparing the benefits and costs of competing alternatives a decision-maker is considering. Derive best methods for conducting Cost-Benefit Analysis, building upon a solid understanding of the theory underlying it. Successful completion of this course allows students to apply the techniques of Cost-Benefit Analysis, and understand the strengths and weaknesses of CBA, including valuation and discounting.

ECON 3014. Game Theory: The Theory of Strategic Behavior I. (SS; 2.0 cr.; prereq 1111 or #; spring, even years)
The analytic approach to strategic interaction. Strategic interaction takes place among people when the payoffs to each person depend on the choices of all the others, and each person knows this fact in choosing their behavior. Development of the basic concepts of the theory of strategic interaction, including the definition of a strategy, extensive form and strategic form representations of the same game, and the solution concepts of Nash equilibrium and rollback equilibrium. A selection of applications of economic interest are covered, such as market entry deterrence and social dilemma games. [Note: no credit for students who have received cr for IS 3206H]

ECON 3015. Game Theory: The Theory of Strategic Behavior II. (SS; 2.0 cr.; prereq 3014 or #; spring, even years)
Extensions to the basic analytic theory of strategic interaction that widen its applicability, including topics such as repeated games, asymmetric information, and refinements to basic solution concepts. A selection of applications of economic interest, such as screening, signaling, and brinkmanship.

ECON 3113. Money, Banking, and Financial Markets. (SS; 4.0 cr.; prereq 1111, 1112 or #; fall, every year)
Nature and function of money; role of commercial banks and other financial institutions; structure and function of Federal Reserve system; monetary policies for stabilization and growth; and a survey and synthesis of major theories on the value of money.

ECON 3121. Public Economics I. (SS; 2.0 cr.; prereq 1111, 1112 or #; spring, offered periodically)
Analysis of the economics of public expenditures.

ECON 3122. Public Economics II. (SS; 2.0 cr.; prereq 1111, 1112 or #; spring, offered periodically)
Analysis of the economics of taxation.

ECON 3131. Comparative Economic Systems. (IP; 2.0 cr.; prereq 1111, 1112 or #; fall, spring, offered periodically)
Comparison of the theory and functioning of the major economic systems of the world; economic reform in capitalist and socialist economies.

ECON 3133. Economics of China. (IP; 2.0 cr.; prereq 1111, 1112; fall, spring, offered periodically)
Examine the sources of economic growth in China, one of the world's largest and fastest-growing economies. Analyze the restructuring and reforms made to the economy, including the opening of the economy to world trade.

ECON 3134. Cooperative Business Model. (SS; 2.0 cr.; [MGMT 3134]; prereq 1111 or #; spring, even years)
Same as Mgmt 3134. In the northern plains of the United States, cooperative businesses, including consumer, producer, and worker cooperatives, have made significant contributions to economic growth and development. Identify the unique economic, legal, and organizational characteristics of these firms and their role in the economy. Special attention is given to the potential role of cooperative business organizations in community development.

ECON 3141. Economic Development and Growth I. (IP; 2.0 cr.; prereq 1111, 1112 or #; fall, every year)
Nature and meaning of economic development. Theories of economic growth and the historical experience of new developed countries. General development problems facing developing countries.

ECON 3142. Economic Development and Growth II. (IP; 2.0 cr.; prereq 3141 or #; fall, every year)
Current development problems and policies in developing countries; the possibilities and prospects for future development. Case studies examining the development progress of these countries.

ECON 3153. Contemporary Global Economic Issues. (IP; 2.0 cr.; prereq 1111, 1112, Stat 1601, or #; spring, offered periodically)
Many of the most important global issues are economic in nature. Questions of population growth and aging, economic and political stability, security, terrorism, trade policy, poverty, development, the environment, energy, technology transfer, and even public health and education, in a global context can only be properly understood with some knowledge of economic principles. Gain knowledge of economic ideas necessary to understand and to criticize professional economic advice about global affairs. Strong emphasis on argumentation, rhetoric, and ability to debate economic ideas in a given framework.

ECON 3172. Strategic Firm Interaction and Market Structures. (4.0 cr.; prereq 1111 or #; spring, offered periodically)
Firms must interact strategically in all market settings except perfect competition and pure monopoly. The course begins with imperfect markets for simple commodities and a consideration of substitutes and complements. More advanced models are then presented which develop topics such as quality differentiation, entry deterrence, collusion, mergers along the supply chain, various types of price discrimination, and natural monopoly. Emphasis is on the relative efficiency of different market structures, with some consideration of options for government regulation.

ECON 3201. Microeconomic Theory. (SS; 4.0 cr.; prereq 1111, Math 1101 or #; fall, every year)
Analytical approach to decision making by individual economic units in the output and input markets, under perfect and imperfect market conditions. Externalities and role of government.

ECON 3202. Macroeconomic Theory. (SS; 4.0 cr.; prereq 1112, Math 1101 or #; spring, every year)
The theory of national income determination; inflation, unemployment, and economic growth in alternative models of the national economy.

ECON 3211. History of Economic Thought I. (HIST; 2.0 cr.; prereq 1111, 1112; fall, every year)
The origin and development of economic thought from Mercantilism through the classical school. Among others, Adam Smith and Karl Marx are featured. Nature of economics as a social science through the study of its historical development.

ECON 3212. History of Economic Thought II. (HIST; 2.0 cr.; prereq 3211 or #; fall, every year)
The development of economic thought from Marx and the end of the classical school, through the development of more modern approaches. In addition to the demise of classical thought, a selection from the thinkers who contributed to the foundations of modern microeconomics and/or macroeconomics is covered. Nature of economics as a social
science, through the study of its historical development.

ECON 3351. Globalization: Examining India's Social and Economic Development. (IP; 4.0 cr.; [MGMT 3351]; prereq 1111 or 1112 or #; spring, offered periodically)
Same as Mgmt 3351. Observe and study the impact of globalization on the Indian economy. Examine the growing class divide between the middle and upper middle class and the lower class. Study the problem of mass poverty in India and its various ramifications such as child labor, lack of education and basic health care, and the inherent gender bias. Examine sustainable grass roots efforts to combat some of these problems.

ECON 3501. Introduction to Econometrics. (MISR; 4.0 cr.; prereq 3201 or 3202, Stat 1601; spring, every year)
Designing empirical models in economics. Simple and multiple regression analysis. Violations of classical assumptions in regression analysis. Logit and probit models; simultaneous equation models and lag models. Emphasis on application techniques to economic issues.

ECON 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ECON 4101. Labor Economics I. (HDIV; 2.0 cr.; prereq 3201 or #; fall, every year)
Wage and employment determination. Distribution of earnings and earnings inequality by race and sex. Labor supply applications.

ECON 4102. Labor Economics II. (2.0 cr.; prereq 3201 or #; fall, every year)
Functioning and performance of the labor market. Heterodox explanations of labor market behavior. Labor demand applications.

ECON 4111. Mathematical Economics I. (2.0 cr.; prereq 3201, 3202 or #; fall, spring, offered periodically)
Application of mathematical methods to economic analysis. Mathematical formulations and solution of optimizing models pertaining to households and firms and of adjustments to disturbances.

ECON 4112. Mathematical Economics II. (2.0 cr.; prereq 3201, 3202 or #; fall, spring, offered periodically)
Topics include linear modeling, input-output analysis and linear programming, efficiency and exchange, comparative static analysis, and dynamic microeconomic and macroeconomic models.

ECON 4121. International Trade Theory. (2.0 cr.; prereq 3201 or Mgmt 3123 or #; spring, every year)
Overview of why trade occurs, pattern of trade and international factor movement. Effect of trade and trade policy on the economy. Current topics in trade theory.

ECON 4131. International Finance. (2.0 cr.; prereq 3202 or #; spring, every year)
Foreign exchange markets; theories of exchange rate determination; fixed vs. flexible rate systems; theories of balance of payments adjustments; international quantity of money theory; international reserves; international monetary system (past, present, and future); internal and external balance, international economic policy coordination, international debt problem; effect of international sector on domestic growth and stability.

ECON 4141. Empirics of Economic Growth. (2.0 cr.; prereq 3202 or 3502, 3501; spring, offered periodically)
Presentation of the recent developments in economic growth with an emphasis on empirical research. Students try to understand "Why are some countries so rich and some countries so poor?" In doing so, students first explore the proximate causes of economic growth such as physical capital, human capital, and productivity, and later move on to explore the role played by fundamental causes such as institutions, geography, and deep history.

ECON 4501. Senior Research Seminar in Economics and Management. (2.0 cr.; [max 4.0 cr.]; prereq or 3501 or #; fall full year course begins in fall sem; fall, every year)
Seminar on selected topics in economics and management. Guided research sessions familiarize students with literature in the field. Students are required to make a formal presentation on their research topic and attend presentations by their peers.

ECON 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Education (ED)
Division of Education

ED 1801. Critical Issues in K-12 Education. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, spring, offered periodically)
The education of K-12 students is reported and discussed in the media on a daily basis and federal programs such as No Child Left Behind and Race to the Top influence the functioning of schools and the education of the K-12 student. State regulations and initiatives are also an important factor in how students learn and how teachers are prepared to teach. How can the average citizen make sense of all this information? Delve into some of the critical issues facing the education of K-12 students. Topics may include issues such as the achievement gap, assessments, bullying, inclusion and equity, and opportunity.

ED 193. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ED 2111. Tutor-Aide Practicum. (1.0 cr.; S-N only; prereq coreq 2121; fall, spring, summer, every year)
Students complete 30 hours of preprofessional field experience in the schools.

ED 2121. Introduction to Education. (SS; 3.0 cr.; A-F only; prereq coreq 2111; fall, spring, summer, every year)
History, philosophy, and purposes of American education; classroom practices and effective teaching; instructional technology; and certification requirements in education.

ED 2131. Foundations of Reading. (2.0 cr.; A-F only; spring, every year)
Theoretical frameworks that undergird the process of reading and its development, including language and linguistic foundations. Stages of reading and fundamentals of reading processes, including phonemic awareness, phonics, fluency, vocabulary, and reading comprehension. Survey of research on key aspects of literacy development and assessment. [Note: this course is a prerequisite for admission to the Elementary Education program; open to students from all disciplines]

ED 2201. Perspectives on Young Adult Literature: Schooling, Society, and Culture. (HUM; 4.0 cr.; summer, offered periodically)
Exposure to multiple genres of young adult literature and brief introduction to various types of response to literature. Special emphasis on multicultural literature, the role of literature in forming moral and cultural values, using literature in the grade 5-12 classroom, and reader response theory and pedagogy.

ED 2221. Diversity and Identity in Literature and Film. (HDIV; 4.0 cr.; spring, offered periodically)
A survey of key concepts in diversity research (including power, prejudice, social justice, institutionalized discrimination, tolerance) as well as identity representation in literary and film texts. Additionally, students analyze power relationships and how they impact and are impacted by such institutions as schooling and the media.

ED 2601. Development, Learning, and Teaching. (SS; 4.0 cr.; A-F only; spring, every year)
Introductory exploration of perspectives on child and adolescent development including cognitive, social/emotional, personal, physical, and language development and theories of learning, with a strong focus on the implications for effective teaching in the P-12 classroom. This course is a prerequisite for admission to the Elementary and Secondary Education programs.

ED 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ED 3011. Global Practicum: Building Intercultural Perspectives for PK-12 Education. (IP; 6.0-10.0 cr.; S-N only; prereq status; #; fall, spring, summer, every year)
The practicum provides students interested in education an opportunity to build their intercultural competence, compare and contrast educational systems, and reflect on
teaching and learning by assisting a PK-12 mentor teacher in a school. [Note: credit will not be granted if credit has been received for IS 3011; special fee required]

ELED 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ED 4121. Strategies for Inclusive Schooling. (2.0 cr.; A-F only; prereq ELED 3101, 3102, 3103, 3111 or admission to the secondary education program; fall, every year) Strategies and techniques for developing inclusive learning environments. Discussion of the differences in strategies in accommodations and modifications. Emphasizes adaptations for students with mild, moderate, and severe disabilities. Introduction to various methods of identifying students with disabilities and follow-up interventions.

ED 4901. The Teacher and Professional Development. (1.0 cr.; A-F only; prereq ELED or SeEd 4201 or 4204 or #; spring, every year) Capstone experience. Professional development issues and philosophy of education are included as topics of study.

ED 4903. Kindergarten Education. (4.0 cr.; A-F only; prereq #; summer, every year) Study of kindergarten education. Topics include: historical foundations, philosophy, current issues and trends, developmental characteristics and organizational needs of kindergarten children, and developmentally appropriate practices and instruction in the classroom.

ED 4911. Kindergarten Practicum. (1.0 cr.; S-N only; prereq coreq 4903; summer, every year) Field experience with kindergarten children.

ED 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Elementary Education (ELED)

Division of Education

ELED 3101. Teaching and Learning Strategies. (3.0 cr.; A-F only; prereq admission to the elementary teacher education program; fall, every year) Elementary school teaching and learning. Planning for instruction, learning theory, multicultural education, classroom management, use of technology in the classroom.

ELED 3102. Reading Methods: Literacy and Language Instruction in the Elementary School. (4.0 cr.; A-F only; prereq admission to elementary teacher education program; fall, every year) Beginning and advanced reading instruction in the elementary grades. Includes study of theory, issues, literacy frameworks, assessment, materials, organization, and instructional strategies to scaffold children’s literacy development.

ELED 3103. Mathematics in the Elementary School. (4.0 cr.; A-F only; prereq admission to the elementary teacher education program; fall, every year) Standards, curriculum, assessment, and methodology for teaching mathematics in the elementary school. Includes the theoretical basis of methodology in mathematics and its application, measurement and evaluation, selection and use of instructional media and computer software, and meeting the needs of culturally diverse and special needs students.

ELED 3111. Practicum I: Field Experience in the Elementary Classroom. (1.0 cr.; S-N only; prereq admission to the elementary teacher education program; fall, every year) Field experience in the elementary classroom.

ED 3102. Middle Level Theory and Methods. (1.0 cr.; A-F only; prereq 3101, 3102, 3103, 3111; spring, every year) Developmental characteristics, organizational and instructional needs of pre-adolescent and adolescent level classrooms. Characteristics of effective middle level teachers.

ELED 3203. Preprimary Theory and Pedagogy. (4.0 cr.; A-F only; prereq 3101, 3102, 3103, 3111; spring, every year) The theoretical foundations of young children's development, historical foundations of early childhood education, interaction with families. Explore the methods, materials, and research for planning and implementing a developmentally appropriate curriculum, assessments, and learning environments for children from ages 3-5. Required for students pursuing a preprimary endorsement. A 40-hour practicum experience (ELED 3211) must be taken concurrently.

ELED 3204. Advanced Childhood and Adolescent Development. (2.0 cr.; A-F only; prereq 3101, 3102, 3103, 3111; spring, every year) Extended study of child and adolescent development with a particular focus on teaching and learning for early elementary and middle school learners. This is a required course for students majoring in elementary education.

ELED 3211. Practicum II: Field Experience in a Preprimary Setting. (1.0 cr.; S-N only; prereq 3101, 3102, 3103, 3111; spring, every year) Field experience in preprimary or kindergarten setting.

ELED 3212. Practicum II: Field Experience in a Middle Level Setting. (1.0 cr.; S-N only; prereq 3101, 3102, 3103, 3111; spring, every year) Field experience in the middle level classroom.

ELED 3213. Practicum II: Field Experience in a K-6 Setting. (1.0 cr.; S-N only; prereq 3101, 3102, 3103, 3111; spring, every year) Field experience in a K-6 classroom.

ELED 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ELED 4102. Social Studies in the Elementary School. (2.0 cr.; A-F only; prereq 3201, 3202, 3211 or 3212; fall, every year) Outcomes, content, integration strategies, and assessment of social studies instruction in the elementary curriculum.

ELED 4103. Science in the Elementary School. (2.0 cr.; A-F only; prereq 3201, 3202, 3211 or 3212; fall, every year) Standards, curriculum, and assessment of elementary school science. Includes theoretical basis of methodology and its application, assessment, selection and use of instructional media and computer software, and meeting the needs of cultural diverse and special needs students.

ELED 4104. Language Arts and Literature in the Elementary School. (3.0 cr.; A-F only; prereq 3201, 3202, 3211 or 3212; fall, every year) Theory, content, assessment, and strategies that support identification, selection, and use of materials and practices in the language arts and children's literature that foster children's language development and growth in reading, writing, speaking, listening, viewing, and visually representing.

ELED 4107. Health and Physical Education in the Elementary School. (1.0 cr.; A-F only; prereq 3201, 3202, 3211 or 3212; fall, every year) Scope, sequence, and related activities in elementary health and physical education.

ELED 4111. Practicum III: Beginning Student Teaching. (2.0 cr.; S-N only; prereq 3201, 3202, 3211 or 3212; fall, every year) Participation in in-service, teaching, and teaching-related activities in preparation for student teaching.

ELED 4112. Practicum IV: Cross-Cultural Experience in the Elementary School. (1.0 cr. [max 2.0 cr.]; S-N only; prereq 3201, 3202, 3211 or 3212; fall, every year) Field experience in the elementary classroom. [Note: special fee required if practicum is in Chicago]

ELED 4201. Directed Student Teaching in Primary and Intermediate Grades. (HDIV; 12.0 cr.; S-N only; prereq 4102, 4103, 4104, 4111, 4112, passing scores on MTLE Basic Skills or #; spring, every year) Students teach for a period of 10 to 12 weeks demonstrating application of approaches to teaching and learning in primary and intermediate grades under the guidance of a cooperating teacher and University supervisor. [Note: special fee required]

ELED 4202. Directed Student Teaching in Primary and Intermediate Grades. (1.0-16.0 cr.; S-N only; prereq passing scores on MTLE Basic Skills or #; fall, spring, every year) For students who need alternative or additional student teaching experience. Students demonstrate application of approaches to teaching and learning in primary and intermediate grades under guidance of a
ENGL 1001. Fundamentals of Writing. (4.0 cr.; fall, every year) Intensive practice in the fundamentals of writing. Students learn and apply strategies for generating, organizing, revising, and editing their writing. [Note: does not fulfill the Writing for the Liberal Arts (WLA) requirement]

ENGL 1011. College Writing. (4.0 cr.; fall, spring, offered periodically) Practice in academic writing, with special emphasis on argumentation, reading closely and critically for the purposes of scholarly analysis, responding to and making use of the work of others, and drafting and revising texts. [Note: does not fulfill the Writing for the Liberal Arts (WLA) requirement]

ENGL 1601. Writing for the Liberal Arts. (WLA; 4.0 cr.; fall, spring, every year) Instruction in academic writing: analysis, argument, inquiry, research, scholarly conversation, clarity, style. Emphasis on writing processes: plan, draft, review, rewrite, revise. Development of information literacy: identify, locate, evaluate, cite, and use electronic and print resources. Workshops with peers and instructor.

ENGL 1801. Fan Cultures and Fan Creativity. (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Exploration of histories and theories of media fandom: considering the role of fans in creating and transforming commercial entertainment (film, TV, music, books, comics) through discussions, fan works, and other interactions and activities. Assignments include both written and multimedia projects.

ENGL 1802. You’re Here! Where’s He?: Reading the Prairie. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, every year) Explore the idea of place and the nature of the place that is the western Minnesota prairie through film, art, and readings by writers such as Bill Holm, Paul Gruchow, Meridel LeSueur, Adrian Louis, Robert Bly, Thomas McGrath, and Carol Bly. [Note: field trips outside of class are required; credit will not be granted if cr has been received for IS 1813]

ENGL 1803. Shakespearean Adaptations. (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, every year) Read four Shakespeare plays and watch a range of contemporary film adaptations of each one. The course also incorporates discussion (about the texts, the nature of adaptation, Shakespeare’s celebrity, etc.) and addresses skills essential to academic success (research, collaboration with peers, analytical writing, etc.).

ENGL 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ENGL 2014. Introduction to Popular Literature: Science Fiction. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; fall, offered periodically) Introduction to popular literature in a variety of styles and forms with emphasis on analysis and context.

ENGL 2015. Introduction to Film Studies. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; spring, offered periodically) Develops students’ abilities to view films critically and to deepen their understanding of the film experience. Begins with critical analysis skills and terminology, then takes up the study of genres and styles, including documentaries and foreign films. [Note: weekly lab required for viewing films]

ENGL 2016. Monsters and the Monstrous in English Literature. (HUM; 4.0 cr.; spring, offered periodically) Monsters in literature reveal our fascination with the supernatural and the grotesque, with the unknown and the boundaries of what it means to be human. Explore how writers have imagined monsters and in what contexts, with examples from the Middle Ages to the present and from British and American literature and film.

ENGL 2022. Sports Literature and Writing. (ART/P; 4.0 cr.; prereq 1601 (or 1011) or equiv; fall, offered periodically) Introduction to sports literature and sports writing, including exploration of rhetorical modes and techniques.

ENGL 2031. Gender Literature and Culture. (HDIV; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; fall, spring, offered periodically) Introduction to literary and cultural representations of gender. Emphasis on the intersections between power and the social relations of gender, race, class, and sexuality.

ENGL 2033. The Bible and Literature. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; fall, offered periodically) Introduction to the role of the English Bible in the western literary tradition. Readings include key Biblical narratives, as well as English and American literary texts that are either deeply influenced by these stories or attempt to rewrite them.

ENGL 2041. Introduction to African American Literature. (HDIV; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; spring, offered periodically) Introduction to issues and themes in African American literature and culture, with emphasis on historical and cultural context.

ENGL 2059. Introduction to Shakespeare. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; spring, odd years) A careful reading of a representative selection of Shakespeare’s poetry and plays (including histories, comedies, tragedies, and romances). Consideration of generic and dramatic conventions, cultural contexts, literary elements, and performance choices on stage and in film. Serves non-majors as well as majors.

ENGL 2061. Introduction to Popular Literature: Detection and Espionage in Fiction and Film. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; fall, even years) Examination of the detective and espionage genres in relation to 20th-century social and geopolitical pressures.

ENGL 2106. Topics in Writing: The Environmental Imagination: Reading and Writing about the Natural World. (ENVT; 4.0 cr.; prereq 1601 (or 1011) or equiv; fall, spring, offered periodically) Writing about the environment. Students learn to use the rich possibilities of language to express their responses to nature and...
convey to others the importance of close contact with the natural world. Readings in poetry and prose, discussion of technique, and experimentation with a variety of styles and literary forms.

ENGL 2107. Writing with Digital Media. (HUM; 4.0 cr.; prereq 1601; spring, offered periodically) Theory and practice of planning, designing, creating, and revising digital texts, including assessing writing situations to choose appropriate form. Students learn building blocks of writing in digital environments (text, sound, images, video), produce texts using these elements, read about multimodal composing, and analyze digital media works.

ENGL 2121. Topics in Writing: Introduction to Creative Writing. (ART/P; 4.0 cr.; prereq 1601 (or 1011) or equiv; fall, every year) Introduction to the basic elements of creative writing, including exploration of poetry, story, and journal writing. Practice with techniques such as dialogue, description, voice, and style.

ENGL 2171. Topics in Writing: Editing and Proofreading. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv; spring, offered periodically) Students learn and practice the techniques of developmental editing, copyediting, and proofreading, while exploring career applications for these skills.

ENGL 2172. Topics in Writing: Professional Writing Skills. (4.0 cr.; summer, offered periodically) For students interested in improving their writing skills in preparation for job hunting and working in a professional environment. Students prepare resumes and cover letters, as well as explore the principles of effective professional communication, including email etiquette, memo writing, preparing reports and proposals, etc.

ENGL 2173. The Nature Essay: Writing and Reading Creative Non-fiction about the Natural World. (ENV/T; 4.0 cr.; prereq 1601; spring, offered periodically) Students learn and practice the techniques of developmental editing, copyediting, and proofreading, while exploring career applications for these skills.

ENGL 2210. Survey of British Literature to the 18th Century. (HUM; 4.0 cr.; fall, every year) Readings in English poetry, prose, and/or drama from the beginnings to the 18th century. Specific authors vary.

ENGL 2222. Survey of British Literature from the 18th Century Forward. (HUM; 4.0 cr.; spring, offered periodically) Readings in English poetry, prose, and/or drama from the 18th century to the present. Specific authors vary.

ENGL 2211. Survey of American Literature to the Civil War. (HUM; 4.0 cr.; fall, spring, offered periodically) Study of important texts, canonical and non-canonical, and important periods and movements that define the colonial and U.S. experience up to 1865.

ENGL 2212. Survey of American Literature from the Civil War Forward. (HUM; 4.0 cr.; fall, spring, offered periodically) Study of selected historical and literary texts in U.S. literature, canonical and non-canonical, from 1865 to the present.

ENGL 2411. Representations of American Indians in Popular and Academic Culture. (HDIV; 4.0 cr.; prereq 1601 (or 1011) or equiv or declared English major; fall, offered periodically) Study of representations of American Indians in American popular and academic culture including literature, films, and sports. Particular attention given to how Indian identity, history, and cultures are represented in pop culture by non-Indians and, more recently, Indians themselves.

ENGL 2501. Literary Studies. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv; fall, spring, every year) An introduction to the tools and methods of literary analysis, including the vocabulary of criticism, the techniques of close reading, and the conventions of literary argumentation. Primarily for English majors and minors. A prerequisite to advanced courses in English. [Note: no credit for students who have received or for Engl 1131]

ENGL 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ENGL 3021. Grammar and Language. (HUM; 4.0 cr.; fall, every year) An introduction to composition theory: generating, composing, revising, and responding to writing; conventions across disciplines; strategies for teaching and tutoring writing. Weekly short assignments; three formal papers, written and revised in stages; oral presentation of research. Required for first-semester Writing Room staff.

ENGL 3102. Advanced Fiction Writing. (ART/P; 4.0 cr.; prereq #; fall, spring, offered periodically) For experienced writers. Focus on developing skills and mastering technical elements of writing fiction.

ENGL 3105. Writing Poetry for the 21st Century. (ART/P; 4.0 cr.; prereq 1601 (or 1011) or equiv; spring, offered periodically) A creative writing class. Practice with the different elements of poetry-sound, rhythm, imagery, voice, line-and exploration of the ways contemporary poets use and transform traditional forms and techniques.

ENGL 3106. Innovations on the Page. (ART/P; 4.0 cr.; prereq 2121; spring, offered periodically) In this creative writing course, students explore new models in literary publishing, literary fiction, nonfiction, and poetry while writing and learning about sudden fiction, the lyric essay, the collage novel, linked short stories, and other innovative forms and movements.

ENGL 3107. Book Publishing: History and Contemporary Trends. (HUM; 4.0 cr.; prereq 1601 (or 1011) or equiv; spring, offered periodically) Consider the history of the book, the role of publishing in cultural production, the implications of the shift toward digital publishing, and an overview of the tasks involved in contemporary publishing, including acquisitions, editing, design, production, sales, and marketing.

ENGL 3301. Grammar and Language. (HUM; 4.0 cr.; fall, every year) Study of the English language. Historical development and current structure. Includes language variation and change, social history of language, phonology, syntax, semantics, development of English grammar, prescriptive versus descriptive grammar, and contemporary theories of grammar.

ENGL 3302. Creative Nonfiction Writing. (ART/P; 4.0 cr.; prereq 1601 (or 1011) or equiv; spring, offered periodically) For experienced writers. Focus on understanding and practicing the rhetorical and stylistic choices available to writers of creative nonfiction, especially decisions about structure, pacing, language, style, tone, detail, description, and narrative voice.

ENGL 3312. The Rise of the Novel. (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; spring, offered periodically) The 18th-century origins of the British novel: experiments with the new form, influence of earlier genres, evolution of formal realism. Authors may include Austen, Burney, Fielding, Richardson, and Sterne.

ENGL 3313. Gothic Literature. (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically) The cultural origins of gothic literature in tension with the neoclassical values of 18th-century Britain and its persistent influence over the next two centuries (including its relationship to modern horror fiction and film). Emphasis on the ways gothic tales encode cultural anxieties about gender, class, and power.

ENGL 3314. 19th-Century British Fiction. (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, spring, offered periodically) The rise of the novel to respectability and prominence in Britain from the Romantics to the Victorians.

ENGL 3315. 20th-Century British Fiction. (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, spring, offered periodically) Major novelists from the Modernist period and after, focusing on the historical context of the new challenges to literary tradition.

ENGL 3316. Modern Irish Literature. (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; spring, offered periodically)
The poetry, fiction, and drama of Irish writers from 1890-1927, with attention to the ways that literature shaped a national identity.

**ENGL 3157. English Renaissance Drama.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically)
A thorough study of the early modern English theater, including readings of 16th- and 17th-century plays and consideration of the literary and cultural contexts that informed them. Special attention is given to the works of Shakespeare's contemporaries, such as Marlowe, Jonson, Cary, Middleton, and Webster.

**ENGL 3159. Shakespeare: Studies in the Bard.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; spring, even years)
A topics-based study of Shakespeare's works and other pertinent texts. Sample topics include "Shakespeare's Women," "Dangerous Rhetoric in Shakespeare," and "Shakespeare and His Sources." Attention is given to historical and literary contexts, and students are asked to consider Shakespeare's work as it is read as well as performed.

**ENGL 3161. Medieval Literature.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, spring, offered periodically)
Early and later medieval prose, poetry, and drama produced and/or widely read in England from about 700-1500.

**ENGL 3163. Life in a Medieval City: Literature and Culture in York, 700-1500.** (HUM; 4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212 or #; summer, offered periodically)
Travel to York, England, to study the literature and history of the city from Anglo-Saxon times to the end of the Middle Ages. Focus on the role that York played as the second city of medieval England, emphasizing the diverse cultural influences on the city. Day trips to historically significant sites in the vicinity of York.

**ENGL 3165. Seventeenth-Century Revolutions.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically)
An in-depth study of how 17th-century British literature represents and responds to the numerous revolutionary changes of the time, including political, religious, sexual, cultural, and genre-based upheavals. Writers to be considered may include Philip Sidney, John Donne, Mary Wroth, George Herbert, Margaret Cavendish, Aphra Behn, and John Milton.

**ENGL 3166. Postcolonial Literature.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, spring, offered periodically)
Study of literature as site of cultural conflict and after imperial encounters, from the perspectives of both colonizers and colonized peoples. Particular focus on Britain and its former colonies.

**ENGL 3168. Victorian Literature and Culture.** (4.0 cr.; prereq 2501, two from 2201, 2201, 2211, 2212, or #; spring, every year)
Studies an array of 19th-century literary forms, including fiction, poetry, drama, and prose, in their social and political contexts.

**ENGL 3171. The Literature of Creative Nonfiction.** (4.0 cr.; prereq 2501 (or 1131); summer, offered periodically)
Explore the genre of creative nonfiction as a literary tradition and help to articulate what creative nonfiction is (as well as what it isn't). Students collaborate in creating working definitions for the genre and prepare projects in which they curate and present a list of readings in the genre.

**ENGL 3172. American Utopian Literature.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically)
Americans have always been drawn to visions of transformation even as they shrink from imagined dangers. Some American literary responses to utopian possibilities and how that literature has shaped and continues to influence the American sense of the possible.

**ENGL 3173. Contemporary British Literature.** (4.0 cr.; prereq 2501, two from 2201, 2202, 2211, 2212, or #; spring, offered periodically)
Exploration of contemporary British literature, with emphasis upon a diversity of new voices.

**ENGL 3174. Contemporary Indian and Caribbean Literature.** (IP; 4.0 cr.; prereq 2501, two from 2201, 2202, 2211, 2212, or #; spring, offered periodically)
Exploration of contemporary literature in English from India and the Caribbean.

**ENGL 3253. Modern and Postmodern Love in the Novel.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212, #; fall, even years)
Modernists and postmodernists are famous for casting an ironic glance on God and Truth. But are they as cynical and skeptical about love? In this course, students work through the writings of prominent 20th-century novelists who struggled to define love.

**ENGL 3261. Modern British and American Poetry.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically)
A study of the continuities and break with traditions in 20th-century poetry. Focus on innovations and experiments in form and theme.

**ENGL 3262. 20th-Century American Poetics: From Modern to Contemporary.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, offered periodically)
Study of the radical shifts in poetry and poetics in 20th-century America. Exploration of the ways that poets such as Robert Lowell, Adrienne Rich, Frank O'Hara, Denise Levertov, Allen Ginsberg, James Wright, and Sylvia Plath broke with modernist conventions and New Critical aesthetics and opened the field for the poetry of the late 20th and early 21st centuries.

**ENGL 3301. U.S. Multicultural Literature.** (HDIV; 4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212, or #; spring, offered periodically)
Examination of literature by African American, American Indian, Asian American, Chicana/o, U.S. Latino/a, and other under-represented peoples.

**ENGL 3311. American Indian Literature.** (HDIV; 4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212, or #; fall, spring, offered periodically)
Study of American Indian literature written in English. Particular attention given to language, identity, land, and sovereignty.

**ENGL 3312. World Indigenous Literature and Film.** (4.0 cr.; prereq 2501, two from 2201, 2202, 2211, 2212, or #, or Amln major; spring, even years)
Comparative study of indigenous literature and film from North America, New Zealand, and Australia with particular emphasis given to issues of political and cultural sovereignty, cultural appropriation, self-representation, and colonial nostalgia.

**ENGL 3331. African American Literature.** (HDIV; 4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, spring, offered periodically)
Study of African American literature. Particular attention given to issues of gender, class, power, "passing," and the racialized body.

**ENGL 3332. African American Women Writers.** (HDIV; 4.0 cr.; prereq 1601 (or 1011) or equiv or #; fall, offered periodically)
If African Americans struggled to achieve equality and recognition in the racist United States, the situation was even more difficult for African American women, who had to contend with the sexism in both the white and black communities. This course examines the writings of prominent African American women.

**ENGL 3411. Critical Approaches to Literature.** (4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212, fall, offered periodically)
An introduction to the major schools of literary theory and cultural analysis; particular attention to the ways in which the dialogue and debate between these approaches define the discipline of literary criticism.

**ENGL 3414. Feminist Theory.** (HDIV; 4.0 cr.; [=GWSS 3414]; prereq [2501 (or 1131)], two from 2201, 2202, 2211, 2212, or [GWSS 1101]; fall, spring, offered periodically)
Same as GWSS 3414. Engages students in a critical examination of several influential works participating in the elaboration of feminist theories. Readings and discussions focus on a series of themes and issues--gender, sexuality, race, class, language, bodies, etc.--and how these issues bear upon society.

**ENGL 3444. Holocaust Literature and Film.** (IP; 4.0 cr.; prereq 1601 (or 1011) or equiv; fall, even years)
Survey of Holocaust literature and film, focusing on works that clarify the political ideology that led so many to participate in the murder of two-thirds of Europe's Jews and that articulated what Jews suffered during the Nazi era.

**ENGL 3522. Harlem Renaissance.** (HDIV; 4.0 cr.; prereq 2501 (or 1131), two from 2201, 2202, 2211, 2212; fall, even years)
During the 1920s, there was a major aesthetic outpouring in the African American community.
ENGL 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ENGL 4004. Research Seminar: Old English Literature and Language. (4.0 cr.; prereq two from 31xx-35xx, #; fall, spring, offered periodically) Prose and poetry of early medieval England (650-1100) in translation and in Old English (which is studied), with attention to material (manuscripts) and cultural contexts and to reception history.

ENGL 4012. Research Seminar: Imagining the Earth. (4.0 cr.; prereq two from 31xx-35xx, #; fall, spring, offered periodically) Study of imaginative writing (poetry and prose) about the earth, and an examination of the ways that language transforms or shapes our perceptions of the natural world. In addition to the primary literary works, students read selections about our understanding of the natural world from science, philosophy, and ecocriticism.

ENGL 4017. Research Seminar: Tricksters-Conjurers in American Indian and African American Literature. (HDIV; 4.0 cr.; prereq two from 31xx-35xx, #; fall, spring, offered periodically) Study of tricksters and conjurers in American Indian and African American literature, in particular their ability to maintain traditional practices and subvert the dominant culture and imposed cultural norms. Special attention given to cultural and historical contexts and questions of power, identity, cultural difference, and assimilation.

ENGL 4023. Research Seminar: Nationalism and Irish Literature. (4.0 cr.; prereq two from 31xx-35xx, #; fall, spring, offered periodically) Examination of 20th-century Irish literature through the lens of cultural nationalism. How questions of language, race, culture, and colonial history make the idea of Ireland problematic. Exploration of a diverse host of writers interested in Irish myths, ideals, and identities with research from Irish and postcolonial studies.

ENGL 4024. Research Seminar: Poet's Choice: The Book as the 25th Poem. (4.0 cr.; prereq two from 31xx-35xx, #; spring, offered periodically) "If you have a book of twenty-four poems, the book itself should be the twenty-fifth," claims poet James Wright. Study of single volumes of poetry, examination of the book as a whole, and consideration of the sequence of poems and recurring images and themes. Exploration of key movements of the 20th century, placing each volume in its literary context.

ENGL 4028. Research Seminar: Inventing a Nation: Early American National Literature. (4.0 cr.; prereq two from 31xx-35xx, #; spring, offered periodically) At the end of the Revolution, Americans set out to create a literature that would define the new nation. Writers adapted old forms and invented new ones in an effort to make American writing distinct and somehow reflective of the nation's values. This course explores those efforts, including drama, novels, magazine writing, and their contexts.

ENGL 4029. Research Seminar: Perspectives on Literacy. (4.0 cr.; prereq two from 31xx-35xx, #; spring, even years) Study of literacies and literate practices, both print and digital; the history and politics of defining literacy; and the role of technologies in literate activities.


ENGL 4032. Research Seminar: Transnational Theory and Literatures. (4.0 cr.; prereq two from 31xx-35xx, #; spring, offered periodically) An intensive study of transnational literature and theory from the turn of the 20th century to the present, emphasizing the movement of marginalized subjects to the center of cultural expression, the intertwining of cultures in contact zones, and the forms of identity emerging from these modern, hybrid cultures.

ENGL 4034. Research Seminar: The Adventure Novel in American and British Literature. (4.0 cr.; prereq two from 31xx-35xx, #; fall, offered periodically) Study of adventure fiction in the Anglo-American tradition from Walter Scott through the mid 20th century, paying particular attention to themes that shaped this tradition, including imperialism and revisions of masculine identity.

ENGL 4035. Research Seminar: Booker Watch: Contemporary British Literature and the Emergence of Canonicity. (IP; 4.0 cr.; prereq two from 31xx-35xx, #; fall, spring, offered periodically) Comparison of leading contenders for the annual Booker Prize. Student research encompasses the history and controversies that have surrounded the Booker, the generic and national traditions favored in the prize, and the emergence of canonicity through the awarding of the prize.

ENGL 4036. Research Seminar: American Biographical Novel. (4.0 cr.; prereq two from 31xx-35xx, #; spring, offered periodically) Before the 1970s, there were only a handful of biographical novels, but since the 1980s, this genre of fiction has become incredibly popular. Examine what led to the rise of the biographical novel and examine a variety of such novels.

ENGL 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ENGL 4121. Methods of Teaching Communication Arts and Literature in the Middle and Secondary School. (4.0 cr.; A-F only; prereq admission to the secondary teacher education program or elementary education program, coreq SeEd 4102, SeEd 4103 or prereq ELED 3202, ELED 3212; fall, every year) Objectives, curricula, special methods, materials, and evaluation appropriate for teaching communication arts and literature in the middle and secondary school.

Environmental Science (ESCI) Division of Science and Mathematics

ESCI 1131. Renewable Energy With Biomass Gasification. (SCI-L; 3.0 cr.; summer, every year) Principles of biomass gasification with a focus on chemical, biological, and economic considerations of biomass energy production. Features hands-on training in chemistry and biomass with classroom and lab activities. Prereq-Math 0901 or placement beyond Math 0901 using ACT/placement exam or instr consent.

ESCI 2201. Field Experience in Environmental Challenges of the Italian Alps. (ENVT; 4.0 cr.; summer, odd years) Study of the impact of geologic processes such as tectonism, mass movement, and flooding; understanding climate change through the observation of vegetation changes and glacier fluctuations; soil and water resources and the archaeological record of the nature of human settlements in the Alps.

ESCI 3111. Evolution of the Minnesota Prairie. (SCI-L; 4.0 cr.; prereq Geol 1101 or EnSt 2101 or #; fall, odd years) Interpretation of the geologic, geochemical, climatologic, and paleontological records of western Minnesota to reconstruct the origin and history of the landscape, flora, and fauna during the last 15,000 years. Topics include: climate, deglaciation, large lakes, vegetation changes, late Pleistocene mammals, peopling of the upper Midwest, and extraterrestrial impact events in the upper Midwest. (3 hrs lect, 3 hrs lab, and field trip)

ESCI 3196. Environmental Science Field Camp. (SCI; 2.0-4.0 cr.; fall, spring, summer, every year) An educational experience in a field or internship setting focusing on identification and solution of environmental science problems in an environmental field, including environmental geology, hydrology, environmental chemistry, or environmental biology. A course syllabus or written plan of work must be approved by the Environmental Science Advisory Committee before registration. Prereq-jr status
ESCI 3301. The Chemistry of Sustainable Energy. (SCI: 4.0 cr.; =CHEM 3301); prereq Ch 2302 or #; fall, even years)
Same as Chem 3301. The fundamental chemical concepts underlying energy sources. Topics include: energy basics, fossil fuels, "sustainable" energy sources, biomass, solar volatrics, hydrogen fuel cells, and nuclear energy.

ESCI 3401. Polymer Chemistry and the Environment. (SCI: 4.0 cr.; =CHEM 3401); prereq Chem 2302 or 2304 or #; spring, even years)
Same as Chem 3401. Introduction to many traditional topics in polymer chemistry including those with a connection to elements of the environment and environmental science such as the preparation of polymers from renewable feedstocks, polymers in renewable energy, green syntheses of polymers, and environmental impacts of polymers.

ESCI 4901. Environmental Science Senior Seminar I. (1.0 cr.; A-F only; prereq #: fall, every year)
Capstone experience in environmental science. Identification and selection of individual research topics and related bibliographic resources; development of skills in the reading of environmental science literature (assessing data, recognizing gaps in the research findings, identifying problems in research conclusions). Discussion of selected topics of environmental interest.

ESCI 4902. Environmental Science Senior Seminar II. (1.0 cr.; A-F only; prereq 4901; #: spring, every year)
Capstone experience in environmental science. Completion of research, assessment of information or data, and formulation of conclusions on the research topic selected. Presentations of research projects.

Environmental Studies (ENST)

Academic Affairs

ENST 1101. Environmental Problems and Policy. (ENVT: 4.0 cr.; fall, spring, every year)
An introduction to the ways in which state, national, and international political systems deal with environmental issues and goals. The development of environmental governance, the regulatory and economic tools of environmental policy, and the impact of institutions, culture, social movements, and historical development.

ENST 1201. Mapping the Environment. (ENVT: 4.0 cr.; summer, offered periodically)
An intense immersion into the world of geographic information systems (GIS), with an emphasis on providing a foundation upon which future coursework and projects can be built. The first half of the course focuses on basic skills and functions; the second half is devoted to an environment-related mapping project. [Note: no elective cr for EnST majors if credit has been received for Gsl 2161]

ENST 2101. Environmental Biology. (SCI-I: 4.0 cr.; fall, every year)
Introduction to concepts in biodiversity, evolution, and ecology. Includes basic chemistry and concepts from cell biology, molecular biology, and genetics. A one-course gateway into upper division Biology courses normally requiring the Biol 1111-2101 sequence. (two 65-min lectures, one 180-min lab) [Note: credit will not be granted if credit has been received for Biol 2101]

ENST 3001. Water Resources Policy. (ENVT: 4.0 cr.; prereq 1101 or Pol 1201 or Pol 1401 or #: fall, odd years)
An examination of fundamental contemporary water resource challenges. Units on water quality (e.g., drinking water) and quantity (e.g., irrigated agriculture) encourage critical evaluation of local, national, and international water development in the contexts of environmental quality, human health, and technology. (two 100 min discussions)

ENST 3101. Industrial Ecology. (4.0 cr.; prereq 1101, 2101, Econ 1111, Geol 1101, Stat 1601, or #: fall, even years)
Systems thinking in the context of industrial/environmental issues. Methods or frameworks including life cycle analysis and design for disassembly, guide an examination of product design, material choice, and flows of energy and resources into, through, and from industrial cycles. [Note: no credit for students who have received cr for EnSt 4101]

ENST 3112. Climate Change and Moral Responsibility. (ENVT: 4.0 cr.; prereq 4 cr of EnSt or #: spring, every year)
Considers the moral responsibilities that citizens have regarding climate change. Includes: (1) tours and discussion of local green infrastructure; (2) panel discussions by professionals and practitioners from the community who will share their expertise; and (3) discussion of the most recent work on climate ethics.

ENST 3201. Environmental Justice. (ECR: 4.0 cr.; prereq 4 cr of EnSt or #: fall, offered periodically)
Environmental justice has shifted the way that scholars, activists, and policy makers understand and address environmental problems. Core environmental concerns such as pollution and climate change are now also understood to be social justice problems. Consider how environmental justice movement and key contemporary environmental justice problems.

ENST 3988. Environmental Studies Pre-Internship Seminar. (1.0 cr.; S-N only; prereq 1101; fall, every year)
Preparation for the environmental studies internship, including attending and writing reflections on presentations by post-internship students, and developing ideas and opportunities for the ENST internship. Students will enroll in this course in fall of sophomore or junior year prior to completing the ENST internship.

ENST 3989. Environmental Studies Post-Internship Seminar. (1.0 cr.; A-F only; prereq 3988 or #: fall, every year)
Culmination of the environmental studies internship includes preparing a final paper and delivering a public presentation on the internship experience. Assessment is based on the quality of the final products and on class participation.

ENST 3996. Internship/Field Experience in Environmental Studies. (2.0-4.0 cr.; S-N only; fall, spring, summer, every year)
An educational experience in a work, research, and/or field setting that provides practical application of the student's theoretical classroom learning experiences. A written plan of work must be approved by the Environmental Studies Internship Coordinator before registration. Prereq-Jr status or instr consent

ENST 4901. Senior Capstone Experience. (4.0 cr.; A-F only; prereq 3989 or 3996, sr status or #: spring, every year)
Students engage in an individual and/or group problem solving project on a multidisciplinary topic germane to Environmental Studies and present results in a public forum.

French (FREN)

Division of Humanities

FREN 1001. Beginning French I. (4.0 cr.; fall, every year)
An introduction to oral and written French, its basic structure, and to French culture.

FREN 1002. Beginning French II. (FL; 4.0 cr.; prereq 1001 or placement or #: spring, every year)
Continuation of 1001.

FREN 1021. July in Paris I: French Language and Culture in Paris. (IP; 4.0 cr.; A-F only; summer, odd years)
Four weeks of intensive beginning French language and culture at the Sorbonne, Paris IV; guided visits to cultural and historical sites. UMM July in Paris course for students with no French experience or less than one semester of college-level French. Does not satisfy FL Gen Ed requirement. See also Fren 1023 and 3060: July in Paris II and III: French Language and Culture in Paris.

FREN 1023. July in Paris II: French Language and Culture in Paris. (FL; 4.0 cr.; A-F only; prereq 1001 or placement or #: summer, odd years)
Fren 1002 equivalent for the July in Paris Program. Four weeks of intensive beginning French language and culture at the Sorbonne, Paris IV; guided visits to cultural and historical sites. Satisfies UMM language requirement. See also Fren 1021 and 3060: July in Paris I and III: French Language and Culture in Paris.

FREN 1031. Modern Studies: The Modern Body in France. (SS; 4.0 cr.; prereq (or coreq) 3011 or #: fall, spring, offered periodically)
Beginning with Vesalius, this course examines how the notions of body and mind have been shaped and reshaped in tandem with the rise of the sciences in France, with emphasis on evolving conceptions of ability and disabilities. Taught in English. Meets Modern Studies (MOS) requirement in the French major.

FREN 1302. French Cinema. (IP; 4.0 cr.; fall, spring, offered periodically)
The history of filmmaking in France from the Lumière brothers to the present; introduction to major trends in film theory. All films have English subtitles. Taught in English. Meets Modern Studies (MOS) requirement for the French major. [Note: does not count towards the Fren minor]

FREN 1303. Paris as Text/Image/Sound. (IP; 4.0 cr.; =HUM 1303): prereq #; fall, spring, offered periodically) Explores how representations of Paris in literature, film, and photography have been a key to the construction and the lived experience of the city and how new parts of writing, image-making, and sound production have emerged from the modern metropolis. Texts by Balzac, Baudelaire, Hemingway, Stein, and others. Taught in English, but all written work can be completed in French to count toward the major. Meets Modern Studies requirement in French major.

FREN 1311. Sub-Saharan Francophone Cinema. (IP; 4.0 cr.; fall, spring, offered periodically) Introduction to the history of cinema in French-speaking West Africa. Students learn to read African films, to recognize and analyze political themes in the films, and to become sensitive to issues facing many African nations in the postcolonial world. All films have English subtitles. Taught in English. Meets Francophone Studies (FRS) requirement for the French major. [Note: does not count toward the Fren minor]

FREN 1312. Morocco: History, Story, Myth. (IP; 4.0 cr.; A-F only; summer, offered periodically) Study of the ways that history, myth, and storytelling intertwine to create Moroccan identity and of the different methods of telling stories through orature, literature, weaving, ceramics, and music. Students learn about current concerns and successes in Moroccan society. Taught in English. Meets Francophone Studies (FRS) requirement for the French major. [Note: does not count toward the Fren minor]

FREN 1993. Directed Study. (1.0-5.0 cr. [max 8.0 cr.]; A-F only; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

FREN 2001. Intermediate French I. (IP; 4.0 cr.; prereq 1002 or placement or #; fall, every year) Review of the essential structural patterns of the French language; continued development of oral, aural, reading, and writing skills based on cultural and literary texts appropriate to this level.

FREN 2002. Intermediate French II. (IP; 4.0 cr.; prereq 2001 or placement or #; spring, every year) Review of the essential structural patterns of the French language; continued development of oral, aural, reading, and writing skills based on cultural and literary texts appropriate to this level.

FREN 2013. Explorations: Grammar. (1.0 cr. [max 2.0 cr.]; S-N only; prereq 1002 or #; fall, spring, every year) Meets once weekly for practice, review, and reinforcement of French grammar and syntax. A good option for students whose semester schedule cannot accommodate a more in-depth course in French or whose skills would be strengthened by review and practice of basic concepts.

FREN 2014. Explorations: Cultures. (1.0 cr. [max 2.0 cr.]; S-N only; prereq 1002 or #; fall, spring, every year) An opportunity for integrated practice in the four skills (listening, speaking, reading, writing) through the discussion of various non-academic texts: children's books, movies, music videos, commercials, and news stories from throughout the French-speaking world.

FREN 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

FREN 3002. Civilization and Composition: From the Middle Ages to Classicism. (HIST; 2.0 cr.; prereq 2002 or #; fall, spring, every year) A study of French culture from early feudal systems through the height of the Classical period under the reign of Louis XIV. Study the development of French society while also refining the ability to write academic papers and to engage in academic discussions in French.

FREN 3003. Civilization and Composition: France Since the Revolution of 1789. (HIST; 2.0 cr.; prereq 2002 or #; fall, spring, every year) A study of French culture from the Enlightenment period up to contemporary society. Study the development of the French nation while also refining the ability to write academic papers and to participate in academic discussions in French.

FREN 3004. Civilization and Composition: Colonialism and Francophone Worlds. (HIST; 2.0 cr.; prereq 2002 or #; fall, spring, every year) A study of the history of French colonialism and of the development of la Francophonie as an association of French-speaking countries outside of France.

FREN 3011. Introduction to French and Francophone Literature. (HUM; 4.0 cr.; prereq 4 credits of 3002 or 3003 or 3004 or #; spring, every year) A survey of literature from France and from across the Francophone world. Study poetry, novels, theater, and film, and develop reading skills and methods of analysis.

FREN 3060. July in Paris III: French Language and Culture in Paris. (IP; 4.0 cr. [max 8.0 cr.; A-F only; prereq 1002 or equiv; summer, odd years]) Four weeks of intermediate or advanced French-language study at the Sorbonne, Paris IV; guided visits to cultural and historical sites. UMM July in Paris course for students who have had a minimum of one year of college-level French. See also Fren 1021 and Fren 1023: July in Paris I and II: French Language and Culture in Paris.

FREN 3112. Advanced Language Studies: Introduction to French Phonetics. (2.0-4.0 cr.; prereq 2002 (or concurrent enrollment in 2002) or #; fall, spring, offered periodically) Training in French pronunciation through general and French phonetics. Students learn the International Phonetic Alphabet and study the correct articulation of French vowels and consonants, as well as other important parts of speech such as liaison, enchainment, and intonation. Meets Advanced Language Studies (ALS) requirement in French major. [Note: no credit for students who have received cr for Fren 2011]

FREN 3113. Advanced Language Studies: Theme et Version. (2.0-4.0 cr.; prereq (or coreq) 3011 or #; spring, odd years) The art of translation applied to everyday discourse, literary texts, and a number of professional fields: journalism, international business, and political, social, and natural sciences with a particular emphasis on specialized vocabularies and advanced grammar and syntax. Meets Advanced Language Studies (ALS) requirement in French major. [Note: no credit for students who have received cr for Fren 4011]

FREN 3114. Advanced Language Studies: Advanced French Grammar. (2.0-4.0 cr.; prereq (or coreq) 3011 or #; spring, even years) Refinement of grammar. Students gain a deeper understanding of the functionality of the French language through a study of French grammar and through applied and historical linguistics. Meets Advanced Language Studies (ALS) requirement in French major. [Note: no credit for students who have received cr for Fren 4012]

FREN 3402. Medieval and Early Modern Studies: Pre-Enlightenment Culture in France. (2.0-4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically) This course traces the history of French culture from the Middle Ages until the death of Louis XIV in 1715; it examines the geography, language, and institutions of medieval and early modern France through literature. Meets Medieval and Early Modern Studies (MEMS) requirement in French major. [Note: no credit for students who have received cr for Fren 3022]

FREN 3406. Medieval and Early Modern Studies: Emotional Extremes in Medieval and Early Modern Literature. (4.0 cr.; prereq (or coreq) 3011; spring, offered periodically) Theories from cultural and religious studies, anthropology, history, psychology, and sociology combine to approach emotional expression in society and in literature. Readings: Durkheim, Freud, Laplanche, Bataille, Chretien's Lancelot, Parnonpeus, Le Roman de Troie, troubadour lyric, Aucassin et Nicolete, Legenda Aurea, Saint Augustine, Ovid's Metamorphoses. Meets Medieval and
Early Modern Studies (MEMS) requirement in French major.

**FREN 3407. Medieval and Early Modern Studies: The "East" and its Marvels.** (2.0-4.0 cr.; prereq 3011; fall, offered periodically)
A Medieval French course introducing cultural and literary aspects of the Middle Ages through marvelous figures and manifestations of the medieval French interpretation of the "East," including attention to exotic forms of clothing and food in romance, crusades, bestiaries, and fabliaux. Students read medieval interpretations of adventure stories such as the Iliad and Aeneid. Meets Medieval and Early Modern Studies (MEMS) requirement in French major.

**FREN 3408. Medieval and Early Modern Studies: Quests, Quails, and Custard's-Food in Life and Literature.** (2.0-4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Spices, game, and chocolate trace the real and imagined movement of the European people in the Middle Ages and Early Modern period in literary and historical sources. Make authentic recipes and read authors, including Marco Polo, from many genres of literature. Meets Medieval and Early Modern Studies (MEMS) requirement in French major.

**FREN 3409. Medieval and Early Modern Studies: Monsters and the Marvelous.** (2.0-4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
The Middle Ages and Early Modern period are introduced through monsters, beasts, and other marvelous figures in genres including romance, hagiography, theatre, bestiaries, and fabliaux. Students analyze gender roles and sexual expression, childhood and adulthood, and animals. Meets Medieval and Early Modern Studies (MEMS) requirement in French major.

**FREN 3501. Modern Studies: The Old Regime and New Ideas: The French Enlightenment.** (4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Explores the absolutism of Louis XIV and the rise of modern secular thinking in the French literature and philosophy of the Enlightenment, with particular attention given to shifting notions of freedom, agency, and one's place within society and relationship to others. Meets Modern Studies (MOS) requirement for the French major. [Note: no credit for students who have received cr for Fren 3039]

**FREN 3502. Modern Studies: Revolution, Romanticism, Modernity.** (4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Examines the emergence of Romanticism, Modernity, Realism, and Naturalism in a historical context shaped by the successive revolutions of 1789, 1815, 1830, 1848, and 1870; industrialization; the rise of a middle class; advances in technology and medicine; and the centrality of images and the popular press in daily life in France. Meets Modern Studies (MOS) requirement in French major. [Note: no credit for students who have received cr for Fren 3037]

**FREN 3503. Modern Studies: Avant-Garde, Existentialism, Experimentation.** (2.0-4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
From la belle epoque through two world wars and the civil unrest of 1968; from France's efforts to come to terms with its colonial past to its role within the European Union, from Proust to Penncac, this course examines French history, culture and literary movements of the past century to the present day. Meets Modern Studies (MOS) requirement in French major. [Note: no credit for students who have received cr for Fren 3038]

**FREN 3505. Modern Studies: Immigration and Identity in Modern France.** (4.0 cr.; prereq (or coreq) 3011 or #; spring, offered periodically)
Examination of the history of immigration in France, with a particular focus on the years following the Algerian War to the present. Study of literary representations of cultural and social dislocation by immigrant minorities in France and of the effects of these narratives on the creation of cultural, social, and national identities within these communities and in France. Discussions of the tensions in France between its relatively new multicultural identity and its traditional identity based on a homogenous set of characteristics.

**FREN 3603. Francophone Studies: Contes francophones.** (2.0 cr. [max 4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Study of the oral tale in African and Caribbean cultures. Examination of the form of these tales, their thematic structure, and how these tales have been translated into written and/or cinematographic texts. Meets Francophone Studies (FRS) requirement in French major. [Note: no credit for students who have received cr for Fren 3042]

**FREN 3604. Francophone Studies: L'Amerique francophone.** (4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Survey of literary texts and movements in Francophone North America, including Quebec and Louisiana, as well as the history of French exploration of the New World. A discussion of the cultural tensions that have threatened and continue to shape Francophone identity in North America. Meets Francophone Studies (FRS) requirement in French major. [Note: no credit for students who have received cr for Fren 3044]

**FREN 3605. Francophone Studies: Le Cinema du Maghreb.** (4.0 cr.; prereq (or coreq) 3011 or #; fall, offered periodically)
A study of Algerian, Tunisian, and Moroccan history and culture as presented through the art of cinema. Examination of films produced in the francophone Maghreb thematically, focusing on topics such as colonialism, gender, Islam, childhood, and immigration. An important goal is to learn to analyze and discuss film academically. Meets Francophone Studies (FRS) requirement in French major.

**FREN 3606. Francophone Studies: Sub-Saharan Francophone Cinema.** (4.0 cr.; prereq (or coreq) 3011 or #; fall, spring, offered periodically)
Introduction to the history of cinema in French-speaking West Africa. Students learn to read African films, to recognize and analyze political themes in the films, and to become sensitive to issues facing many African nations in the postcolonial world. Meets Francophone Studies (FRS) requirement in French major.

**FREN 3607. Francophone Studies: Sex and Gender in Francophone Literature.** (2.0 cr.; prereq 3011 or #; fall, spring, offered periodically)
The study of gender and sexual identities in Francophone literature and film. Discussion of models of femininity and masculinity, and how the binary system of sexuality and gender excludes some LGBTQIA* individuals. Examination of various models of feminism from Africa and the Caribbean. Meets Francophone Studies (FRS) requirement in French major.

**FREN 3993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**FREN 4902. French Capstone Project.** (2.0 cr.; prereq a minimum of 16 credits completed in 3xxx electives; #; spring, every year)
Students work in consultation with the course instructor in one of two tracks: they either develop a project they began in another French elective course or they develop a project related to another major. For either track, students undertake a significant research project (in terms of both length and depth) and present their findings in a formal presentation in French.

**FREN 4991. Independent Study in French Abroad.** (IP; 4.0 cr. [max 12.0 cr.; prereq 2002 or #; 3022 or 3032 or 3041 recommended; fall, spring, offered periodically)
An independent study designed for study abroad and based on the student's research interests in French or Francophone language, culture, history, etc. The project is defined in consultation with a French faculty member before the student leaves the United States. The faculty member guides the project via email.

**FREN 4993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

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**Gender, Women, and Sexuality Studies (GWSS)**
Division of Social Sciences

**GWSS 1101. Introduction to Gender, Women, and Sexuality Studies.** (HDIV; 4.0 cr.; fall, every year)
This course introduces students to the theoretical concepts and impact of gender and sexuality in everyday life. Various feminist,
The theory and practice of Geographic Information Systems. Topics include data models, spatial statistics, and cartographic modeling. Special emphasis on social and environmental applications. (two 65-minute lectures, one 120-minute lab session per week)

**Geography (GEOG) Division of Social Sciences**

**GEOG 2001. Problems in Geography.** (ENV 4.0 cr.; spring, even years)

Basic concepts and questions in the field of geography. The terminology and approaches of geographical inquiry and analysis, with emphasis on the spatial patterns and arrangements of human interaction with the landscape and the production of geographical knowledge.

**GEOG 2501. Geographic Information Systems.** (ENVT 4.0 cr.; prerequisite any 1xxx course in social or natural sciences; fall, spring, offered periodically)

**Geology (GEOL) Division of Science and Mathematics**

**GEOL 1001. Environmental Geology: Geology in Daily Life.** (SCI-L; 4.0 cr.; spring, every year)

Effects of volcanoes, earthquakes, and floods on humans and civilization; geologic problems associated with rural and urban building, waste management, and waste disposal; the importance of geologic knowledge in the discovery of fossil fuels and mineral resources. (4 hrs lect) [Note: may not count toward the geol major or minor]

**GEOL 1011. Geology of the National Parks.** (SCI; 4.0 cr.; fall, offered periodically)

Exploration of the fundamental aspects of the geosciences: earth materials, geologic time, plate tectonics, and the evolution of landscapes by examining the geology and geologic history of the U.S. national parks. (4 hrs lect) [Note: may not count toward the geol major or minor]

**GEOL 1012. Oceanography.** (SCI; 4.0 cr.; fall, offered periodically)

Physiography and geological evolution of ocean basins; marine sedimentation; coastal processes and environments; chemical evolution, and chemical and physical properties of seawater; ocean-atmosphere interactions; deep-ocean circulation; waves and tides; marine ecosystems. (4 hrs lect) [Note: may not count toward the geol major or minor]

**GEOL 1101. Physical Geology.** (SCI-L; 4.0 cr.; fall, spring, even years)

Introduction to the materials that make up the Earth and the structures, surface features, and geologic processes involved in its origin and development. Lab work includes study of the major constituents of the Earth's crust, including the important rocks and minerals; study of surface and geologic features using aerial photographs, topographic maps, and satellite imagery. (3 hrs lec, 3 hrs lab)

**GEOL 1993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

This course requires a theoretical analysis paper, in which students analyze and reflect on their academic coursework and own intellectual autobiography. Students are expected to consider and apply feminist, queer, and/or other gender-oriented theoretical approaches in this final paper. This course also requires a portfolio and a presentation and panel discussion. Students can work with any faculty teaching GWSS courses.

**GWSS 3414. Feminist Theory.** (HDIV; 4.0 cr.; ENGL 3414; prerequisite(s) [1101 or English 2501 (or 1131); two from 2201, 2202, 2211, 2212]; fall, spring, offered periodically)

Same as English 3414. Engages students in a critical examination of several influential works participating in the elaboration of feminist theories. Readings and discussions focus on a series of themes and issues—gender, sexuality, race, class, language, bodies, etc.—and how these issues bear upon society.

**GWSS 3993. Directed Study.** (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**GWSS 4901. Gender, Women, and Sexuality Studies Capstone.** (1.0 cr.; A-F only; prerequisite completion of 32 cr in women's studies; fall, spring, every year)

This course requires a theoretical analysis paper, in which students analyze and reflect on their academic coursework and own intellectual autobiography. Students are expected to consider and apply feminist, queer, and/or other gender-oriented theoretical approaches in this final paper. This course also requires a portfolio and a presentation and panel discussion. Students can work with any faculty teaching GWSS courses.

**GWSS 4902. Feminist Research Methods.** (1.0 cr.; A-F only; prerequisite(s) [GWSS 3414]; fall; every year)

Study of the research methods and strategies that are utilized in feminist research, with an emphasis on the development of theses, proposals, and publications, as well as the challenges encountered in the research process. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

**GWSS 4910. Feminist Theory and Feminist Research Methods.** (HDIV; 4.0 cr.; HDIV 3414; prerequisite(s) [GWSS 3414]; fall, spring, offered periodically)

Study of the research methods and strategies that are utilized in feminist research, with an emphasis on the development of theses, proposals, and publications, as well as the challenges encountered in the research process. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

**GWSS 5901. Feminist Theory and Research Methods in Gender, Women, and Sexuality Studies.** (HDIV; 4.0 cr.; prerequisite(s) [GWSS 4901 or [GWSS 4910]; fall, every year)

This course explores the ways in which Sub-Saharan African film directors have used cinematic arts to challenge and envision new perspectives about gender and sexuality. Students can work with any faculty member for academic credit in areas not covered in the regular curriculum.

**GWSS 5993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

This course requires a theoretical analysis paper, in which students analyze and reflect on their academic coursework and own intellectual autobiography. Students are expected to consider and apply feminist, queer, and/or other gender-oriented theoretical approaches in this final paper. This course also requires a portfolio and a presentation and panel discussion. Students can work with any faculty teaching GWSS courses.
plate tectonics. Emphasis on how geological thought has evolved through time as the scientific, religious, and political climate has changed. Discussion of the Earth's history and science's changing views of the Earth; continental movements, mountain building, and the evolution and development of organisms and ecosystems. Lab experience on methods of interpreting Earth's history from rocks, fossils, and structures and solving geological problems. (3 hrs lect, 3 hrs lab)

**GEOL 2161. GIS and Remote Sensing.** (SCI; 4.0 cr.; prereq 1101 or Biol 1101 or Biol 1111 or #; spring, every year)
Introduction to design, development, and application of Geographic Information Systems (GIS); overview of acquisition and utility of satellite data and imagery; emphasis on applications in Earth and environmental sciences; lab component focuses on practical aspects of GIS development and use and involves original semester projects designed and implemented by individual students.

**GEOL 2301. Geology of Minnesota.** (SCI-L; 4.0 cr.; summer, offered periodically)
Active, hands-on learning both in class and on class field trips to selected localities throughout the state. Field trips include: Pipestone National Monument; glacial geography of western-central Minnesota; geology of the Minnesota River Valley; and St. Cloud Quarry Park.

**GEOL 2993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**GEOL 3001. Global Tectonics.** (SCI; 4.0 cr.; prereq #; fall, spring, offered periodically)
Internal structure and composition of the Earth; geometry and motion of lithospheric plates; geological and geophysical processes at plate boundaries; evolution of mountain belts; heat flow, thermal convection, and the driving mechanism for plate movement.

**GEOL 3006. X-ray Diffraction Techniques for the Identification of Clay Minerals in Geologic Environments.** (2.0 cr.; prereq 1101; spring, offered periodically)
Introduction to clay mineralogy, discussion of the significance of clay minerals in physicochemical and biological processes that occur in terrestrial and marine environments, and the application of X-ray diffraction in the identification and analysis of clays in different geologic environments.

**GEOL 3011. Earth Resources.** (ENVT; 4.0 cr.; prereq any 1xxx or 2xxx Geol course or #; fall, offered periodically)
Geology of mineral (base metals, precious metals, and non-metals), energy (fossil fuels, uranium, and alternatives), and other (water and soil) resources; overview of techniques for resource identification, delineation, and extraction; discussion of issues (e.g., environmental, political, and social) surrounding resource identification, extraction, and use; global resource distribution, historical trends, and future outlook.

**GEOL 3101. Structural Geology.** (SCI-L; 4.0 cr.; prereq 2111 or #; spring, every year)
Elementary concepts of stress and strain, theory of rock deformation; description and classification of structures in the Earth's crust; application of geometric, analytical, and map interpretation techniques to solving structural problems; field mapping problems. (3 hrs lect, 3 hrs lab and field trips)

**GEOL 3111. Introduction to Paleontology.** (SCI-L; 4.0 cr.; prereq 2151 or Biol 2101 or EnSci 2101 or #; fall, even years)
An introduction to the study of the evolutionary history of life on earth as revealed in the fossil and geologic record. Laboratory focuses on study of the classification, morphology, and paleoecology of invertebrate fossils. (two 65-min lect, one 3-hr lab, and weekend collecting trip required)

**GEOL 3401. Geophysics.** (SCI; 4.0 cr.; prereq Math 1101 or Phys 1101 or #; fall, odd years)
Propagation of seismic waves, earthquake seismology, and the structure of the Earth; the origin and nature of the Earth's magnetic and gravitational fields; the Earth's internal production and flow of heat; composition, state, and rheology of the Earth's interior; plate tectonics and elementary geodynamics. (4 hrs lect)

**GEOL 3501. Hydrology.** (SCI; 4.0 cr.; prereq Math 1101 or #; fall, even years)
An examination of the hydrological cycle; evapotranspiration and precipitation; processes of infiltration; rainfall-runoff relationships and the generation of overland flow; response of the drainage basin to storm events; flood-frequency analysis; elements of groundwater flow and evaluation of aquifer characteristics; water quality, contamination, and contaminant transport. (4 hrs lect)

**GEOL 3502. Groundwater.** (ENVT; 4.0 cr.; prereq 1101 or #; spring, odd years)
The origin, occurrence, and availability of groundwater, aquifer geology and groundwater resources, chemical character of groundwater and groundwater pollution, groundwater wells and well design, and groundwater as a geologic agent. (3 hrs lect, 3 hrs lab and field trips)

**GEOL 3993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**German (GER)**
Division of Humanities

**GER 1001. Beginning German I.** (4.0 cr.; fall, every year)
Introduction to German as it is spoken and written presently. The course acquaints students with the basic sounds, structures, and vocabulary of German and enables them to understand, read, and write the language and to communicate in German about everyday situations. It makes them aware of the relationship between culture and language.

**GER 1002. Beginning German II.** (FL; 4.0 cr.; prereq 1001 or placement or #; spring, every year)
Continuation of 1001.

**GER 1993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**GER 2001. Intermediate German I.** (IP; 4.0 cr.; prereq 1002 or placement or #; fall, every year)
The skills of listening, reading, and writing are enhanced through grammar review while exploring several different cities in German-speaking lands and their history and cultural heritage. Course improves students' listening, speaking and writing abilities through guided readings including assignments on the internet relevant to topics such as geography, history, and culture.

**GER 2002. Intermediate German II.** (IP; 4.0 cr.; prereq 2001 or #; spring, every year)
Builds on existing German skills by exploring several different cities in German-speaking lands along with their history and cultural heritage. The course further improves students listening, speaking and writing abilities through grammar review and guided readings including assignments on the internet relevant to topics such as geography, history, and culture.

**GER 2993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a
GER 3201. Periods: German Classicism. (HUM; 4.0 cr.; prereq 3101, 3102 or #; spring, odd years) Readings in aesthetic theory and exemplary works by writers of the period. Texts by Goethe and Schiller are read and analyzed in conjunction with opera librettos based on their works. Modern films and videos of theater performances supplement the readings.

GER 3701. The Red Army Faction in German Literature. (IP; 4.0 cr.; prereq Ger 3xxx course or #; summer, offered periodically) Examination of the historical background surrounding the turbulent era of student protest in Germany and subsequent formation of the terrorist organization, the Red Army Faction. This course is only offered in German.

GER 3702. Martial Masculinities: Manhood and Aggression in German Literature and Culture. (HUM; 4.0 cr.; summer, offered periodically) Examination of masculinity in German-speaking lands by exploring history, literature, film, and graphic art from a theoretical perspective with particular focus on patterns of representation that define and shape "manliness" from the medieval to the modern era.

GER 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

GER 4001. German Civilization I: From the Stone Age to 1871. (HIST; 4.0 cr.; prereq 3001 or equiv; fall, every year) This course facilitates effective engagement with the history and culture of German-speaking countries and Europe throughout the 19th century. This is a lecture style course taught entirely in German to improve listening, speaking, and writing abilities as well as to prepare for a study abroad experience.

GER 4002. German Civilization II: From 1871 to the Present. (HIST; 4.0 cr.; prereq 3001 or equiv; spring, even years) This course facilitates effective engagement with the history and culture of the German-speaking countries and Europe from the late 19th century to the present. This is a lecture style course entirely in German that improves listening, speaking, and writing abilities and prepares students for a study abroad experience.

GER 4101. History of the German Language. (HIST; 4.0 cr.; prereq 1001 or equiv; spring, even years) A linguistic history of the German language from its Proto-Indo-European roots to the present day. Particular emphasis is placed on understanding the historical origins of modern structures, leading to a deeper understanding of Modern German. Taught in English. Some knowledge of German required. (German majors must turn in written work in German.)

GER 4901. Senior Project. (1.0-5.0 cr. [max 10.0 cr.]; prereq 3011 or #; fall, spring, every year) A substantial scholarly or creative work (at the undergraduate level) in conjunction with faculty member for academic credit in areas not covered in the regular curriculum.

GER 3002. Introduction to the Linguistic Analysis of German. (IP; 4.0 cr.; prereq 3001 or equiv; fall, offered periodically) This course will provide an introduction to the linguistic analysis of German. In addition to examining the German language from the perspective of linguistic theory, students will be introduced to a variety of different theories of language and linguistic frameworks. [Note: knowledge of German is required]

GER 3011. Readings in German. (IP; 4.0 cr.; prereq 2011 or #; may enroll concurrently with 2002; soph or higher recommended; spring, every year) Students read and analyze modern texts in order to advance their ability to comprehend and discuss contemporary German literature. This course is a prerequisite for more advanced courses in the major and minor.

GER 3031. German Play. (ART/P; 4.0 cr.; prereq 2001 or #; fall, spring, offered periodically) Reading, study, and presentation of a short contemporary play. Enhances fluency and familiarity with the modern German idiom.

GER 3041. New German Cinema. (IP; 4.0 cr.; prereq 3011; fall, offered periodically) Traces the development of New German Cinema, which began in the 1960s, and continues in the post-unification era. Introduction to films by both East and West German directors who define this national cinema; the cultural, political, and economic context of its production; reference to theories and critiques to provide an overview of German film and culture of the period. Film presentations are in German with English subtitles. Readings and lectures are in English. Final papers are either in German (for German credit) or English (for Humanities credit).

GER 3042. Weimar Film. (IP; 4.0 cr.; prereq 3011; spring, offered periodically) Development of the German film as expressionistic art form. Film as text, film as history, film as aesthetic expression. Film presentations are in German but with English subtitles in most cases. Readings and lectures are in English. Final papers either in German (for German credit) or English (for Humanities credit).

GER 3101. Introduction to German Literature and Culture I. (HUM; 4.0 cr.; prereq 2002 or #; may enroll concurrently with 3001; fall, every year) Introduces German culture through a variety of texts and media (music, film, etc.) throughout all periods of German literature with the aim of building reading, writing, and listening skills. Ideally taken together with Ger 3001.

GER 3102. Introduction to German Literature and Culture II. (HUM; 4.0 cr.; prereq 3101 or #; spring, every year) Builds on 3101 and introduces German culture through a variety of texts and media (music, film, etc.) throughout all periods of German Literature with the aim of building reading, writing and listening skills.
HIST 1015. Topics and Problems in World History. (HIST; 4.0 cr.; max 8.0 cr.; A-F only; fall, spring, every year) Examination of special topics in world history. Course is built around specific topics, such as genocide in the 20th century or global approaches to environmental history, and emphasizes how historians work, pose questions, use sources, and engage in debate.

HIST 1111. Introduction to World History. (HIST; 4.0 cr.; [HIST 1101, HIST 1102]; fall, spring, every year) Methods, themes, and problems in the study of world history.

HIST 1301. Introduction to U.S. History. (HIST; 4.0 cr.; fall, every year) Methods, themes, and problems in the study of the history of the United States.

HIST 1402. Gender, Women, and Sexuality in American History. (HDIV; 4.0 cr.; fall, spring, offered periodically) Themes and methods in the history of women in the United States. Topics may include women in the colonial era; American Indian, African American, and immigrant women; sex roles; women and work, family, politics, the law, and religion.

HIST 1501. Introduction to East Asian History: China, Japan, and Korea before 1800. (HIST; 4.0 cr.; offered periodically) Examination of the social, political, economic, technological, and cultural changes in East Asia before 1800. Possible sub-themes include the rise of the Confucian world order, the spread of Buddhism, and East Asian interactions with the outside world. Discussion of changing perceptions of gender.

HIST 1601. Latin American History: A Basic Introduction. (IP; 4.0 cr.; spring, odd years) Methods, themes, and problems in the study of Latin American history.

HIST 1811. A History of You(th). (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Why does the behavior of young people attract so much attention and anxiety? Why does the stage between childhood and adulthood carry such significance in our collective consciousness? Engage in a historical analysis of what youth has signified, using source materials from Plato to pop culture. Along the way, engage chronologically with the emergence of the categories of childhood and youth and thematically with the relationship between youth and a multitude of social categories and phenomena (for example, politics, media, consumption, and sexuality). Requires extensive reading, active classroom participation, and the completion of a research project and presentation with both individual and group components.

HIST 1812. FIRE!: An introductory Seminar to American Environmental History. (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) One of the primary ways in which people have manipulated their environments has been through the burning of fossil fuels. Indigenous people, for instance, used fire to clear land, to improve soil quality, and to drive game. Coal powered the Industrial Revolution and oil provided the energy necessary for the Automobile Age. The impact of using energy in this way is today obvious. This course is organized around the topic of fire and uses this theme to examine core issues in American Environmental History. Topics might include: American Indian peoples and fire, burning and early agriculture, coal and industrialization, the Age of the Automobile, incineration and the problem of waste, and forest arson as a mode of political protest.

HIST 1816. Explaining the Inexplicable: 20th Century Genocides. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Examination of a couple of the contemporary world's largest and most important dilemmas. Why did we see all the now familiar campaigns of mass murder based on racial and ethnic hatred in the last century, a time of incredible scientific progress? Why, in addition, have we been so slow to learn from this experience? Why, in short, have we been so unsuccessful in honoring our pledge of "never again?" Through history, memoir, and film, examine these questions and try to understand and answer them from both an historical and a moral perspective.

HIST 1817. Introduction to American Political History and Television. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Introduction to the role that television has played (and continues to play) within American political history. As one of the most powerful forms of communication in the United States, television has impacted how Americans view their political leaders and their policies. Topics include political advertising, satire and comedy programming, the news, and children's programming.

HIST 2003. Public History. (HIST; 4.0 cr.; spring, offered periodically) Introduction to the many ways historians conduct research and present historical topics to public audiences. Public historians, who typically come from a traditional academic discipline, utilize their knowledge in such public settings as museums, archives, historic sites, historical societies, and federal agencies. Examine a number of themes ranging from oral histories and historical reenactments to websites and electronic media. Explore what is public history, who practices it, the role of audience, the tension between history and memory, and the ethical concerns that influence public history practice. A particular emphasis is the representation of racial and ethnic communities and the controversies that have emerged in public history practice and scholarship about the representation of "the other."

HIST 2103. Medieval Europe. (HIST; 4.0 cr.; fall, spring, offered periodically) Survey of historical developments in Europe from about 500 to 1500.

HIST 2151. Modern Europe. (HIST; 4.0 cr.; fall, spring, offered periodically) History of modern Europe emphasizing political, economic, social, and intellectual developments since 1789.

HIST 2251. American Indians and the United States: A History. (HIST; 4.0 cr.; fall, every year) The experience of the original Americans and their interaction with later immigrants.

HIST 2352. The U. S. 1960s. (HIST; 4.0 cr.; fall, every year) History of the United States in the 1960s. Backgrounds to the 1960s; political and cultural issues of the decade; the Kennedy promise, civil rights and other movements, Vietnam war, counterculture, conservative backlash, and legacy.

HIST 2451. The American West. (HIST; 4.0 cr.; [HIST 3451]; fall, every year) Overview of the history of the American West up to the 21st century. While many scholars have argued that the "West" was merely a necessary process of national expansion, others argue that it is a very significant region--the most culturally and ecologically diverse region in the country. Discussion of these major historical interpretations of the American West and examination of how people have understood this vast region as a cultural icon of national identity. Work through various definitions of the West and identify how political issues of the environment, international borders, and gender and race relations have significantly influenced the United States for many generations. Through lectures, readings, and discussion, examine Western history chronologically while also covering other major themes including federalism, the mythic West, tourism, ranching and agriculture, urban and suburban areas, film, and religion.

HIST 2452. Minnesota History. (HIST; 4.0 cr.; fall, spring, offered periodically) Examination of the social, cultural, and political history of Minnesota with emphasis on American Indian and European-American conflict, immigration and ethnicity, the development of political culture, and the changing nature of regional identity.

HIST 2551. Modern Japan. (HIST; 4.0 cr.; fall, spring, offered periodically) The history of Japan from the foundation of the Tokugawa Shogunate until the present. Special attention to issues of gender, nationalism, and modernity.
HIST 2502. History of Modern China. (HIST; 4.0 cr.; spring, offered periodically) Study of the history of China from the foundation of the Qing dynasty in the 1600s until the present. Special attention to issues of gender, nationalism, and modernity.

HIST 2557. History of Southeast Asia. (HIST; 4.0 cr.; spring, offered periodically) A broad survey of Southeast Asia's civilization and its modern challenges. Emphasizes recent colonialism, nationalism, and postwar development.

HIST 2608. History of Cuba: From Colony to Revolutionary State. (HIST; 4.0 cr.; fall, spring, offered periodically) A survey of the history of Cuba from Spanish colonization to the present, with emphasis on the 19th and 20th centuries. Topics include colonization, slavery, imperialism, nationalism, and the Cuban Revolution.

HIST 2609. History of Brazil: From Sugar to Sugar Cars. (HIST; 4.0 cr.; fall, even years) Examination of Brazilian history from Portuguese colonization in the early 1500s to its current status as a growing world economic power. Topics include Portuguese colonial rule, independence, and the creation of the Brazilian Empire in the nineteenth century, the end of the Brazilian monarchy and the emergence of the oligarchic republic, the rise of the populist state in the mid-twentieth century, military dictatorship during the Cold War, and the return to democracy and Brazil's rise to world-power status. Additional topics include the Amazon and environmental history, indigenous history, Afro-Brazilian history, the U.S.-Brazilian relationship from a historical perspective, Brazilian economic development, how Brazilians are coping with the socioeconomic changes in their society, and how they perceive their role in the world.

HIST 2704. Gender, Women, and Sexuality in Medieval Europe. (SS; 4.0 cr.; spring, odd years) Analysis of the history of European women and gender systems as constructed during the Middle Ages (c. 500-1500).

HIST 2708. Gender, Women, and Sexuality in Modern Europe. (IP; 4.0 cr.; fall, spring, offered periodically) Examination of the forces that have shaped the lives of European women since 1600 and analysis of how changes in the structures of power and authority—religious, political, social, familial—affected the choices available to them. Students engage critically with the question of what bringing gender to the forefront of the study of European history has to teach them. Students gain an understanding of many of the underpinnings of American society, which has been deeply affected by European patterns of thought about women and their place in the world.

HIST 3008. The Making of the Islamic World. (HDIV; 4.0 cr.; fall, even years) Examines the origins, spread, and impact of Islamic civilization from the 6th through 15th centuries with particular emphasis upon political, religious, and intellectual developments.

HIST 3101. Renaissance and Reformation. (HIST; 4.0 cr.; spring, odd years) Examination of western European history and historiography between 1350 and 1600 with emphasis on cultural "renaissances" and religious "reformations."

HIST 3102. Early Modern Europe. (HIST; 4.0 cr.; fall, spring, offered periodically) Survey of historical developments in Europe from about 1350 through the 18th century.

HIST 3161. The Enlightenment. (HIST; 4.0 cr.; spring, odd years) The intellectual ferment of the Enlightenment has been given the credit and the blame for all things modern—from the concept of human rights and the democracies it has engendered to the subversion of those rights in the totalitarian regimes of the 20th century. Exploration of the ideas of the Enlightenment and their political context and attempt to answer the question of how such an important development in human history can be viewed in such contradictory ways.

HIST 3162. The Scottish Enlightenment: Markets, Minds, and Morals. (IP; 4.0 cr.; =PHIL 3162; summer, offered periodically) Same as Phil 3162. Study of the philosophy and history of the Scottish Enlightenment. Focus on its original setting through analysis and discussion of primary texts and scholarly interpretations, guest lectures, and small-group discussions with recognized experts in the study of the Scottish Enlightenment. Includes visits to historically significant cities and sites.

HIST 3176. Berlin as a Site of History. (HIST; 4.0 cr.; A-F only; summer, offered periodically) A study abroad course focusing on the intersection of space and history in the vibrant city of Berlin, Germany. Themes include Berlin in flows of capital and power, Berlin as a site of everyday life, and Berlin as a site of historical memory and contest over it. No knowledge of German is necessary.

HIST 3177. Virtue and Vice in Amsterdam: From the Golden Age to the Global Age. (IP; 4.0 cr.; summer, offered periodically) The "Golden Age" of the 17th-century Dutch Republic and the post-World War II period in the Netherlands represent times of intensive economic growth, linked closely to international involvement, and of struggles to maintain social stability. Definitions of virtue and vice in both periods have been deeply intertwined with the experiences of prosperity and the challenges it has posed to established forms of governance, as well as understandings of what constitutes membership in a national community and who merits it. Topics include religious identities of the early modern period; social welfare practices of the Dutch Republic; the Dutch East India Company, maritime prosperity, and colonial exploitation; the Dutch Republic as a refuge for radical thought; Jews in Amsterdam; social movements since World War II, including GLBT rights; postcolonial politics and immigration; Islam in the Netherlands; the legality of prostitution and the official tolerance of drugs.

HIST 3181. The Study of History: Schools, Rules, and Tools. (HIST; 4.0 cr.; prereq #; spring, every year) Introduction to historical research methods and 20th-century historiography. How to evaluate and employ primary and secondary sources, to cite evidence, and to develop critical historical arguments in a research project. Exploration of key transformations within the field of history, surveying various schools of thought, and assessing the specific advantages and challenges of the approaches. Topics may include Freudian and Marxist interpretations, the Annales school, quantitative analysis, anthropological and sociological approaches, and gender and postcolonial theory. [Note: no credit for students who have received cr for Hist 2001]

HIST 3204. Nazi Germany. (HIST; 4.0 cr.; fall, odd years) History of Nazi Germany. Social and political origins, Nazi rule in the 1930s, the "final solution," World War II, and Germany's attempt to assess this era in its history.

HIST 3207. The Crusades. (IP; 4.0 cr.; spring, even years) Explores the historical contexts and consequences of the European Crusades between the 11th century and early modern period, including the perspective of European Jews, Turkish and Arabic Muslims, and Byzantine and Near Eastern Christians.

HIST 3209. Modern Germany. (HIST; 4.0 cr.; spring, odd years) Examination of German history from the development of German national ideas through unification and consolidation of the modern German state in 1871 and through its re-unification at the end of the 20th century. Examines one of the most fascinating and tumultuous periods in German and European history, why the attempt to understand the German past has occupied so many historians, and why the debates surrounding that attempt have been so contentious. Sources include writings by established historians of Germany, novels, films, and music.

HIST 3211. Modern France. (HIST; 4.0 cr.; fall, even years) Examination of French culture and history from the Revolution (1789) to the present. The ways in which successive governments, from Napoleon's empire through the Fifth Republic, have come to terms with legacies of the Revolution such as national citizenship, individual rights, and the politicization of women.

HIST 3213. Modern Britain: Society, Culture and Politics. (HIST; 4.0 cr.; spring, offered periodically) Examination of the history of modern Britain and its empire since the 17th century. Topics include the growth of Britain as a world power through imperialism and industrialization, the challenges of shaping a modern polity, and the 20th-century shifts that reduced its global profile.
HIST 3303. Creation of the American Republic. (HIST; 4.0 cr.; fall, spring, offered periodically)
Examination of the history of the United States from the beginning of the Seven Years' War in 1754 to the end of the War of 1812. The origins of the nation and the political, cultural, and social changes that accompanied the birth and early years of the American Republic. Focus on the political and social history of the American Revolution. Other topics include women in revolutionary America, the reenfranchisement of enslaved people and early Indian policy, religion and revivalism, the constitutional crisis, and the early presidencies.

HIST 3304. Race, Class, and Gender in American History. (HDIV; 4.0 cr.; fall, spring, offered periodically)
The themes of race, class, and gender are explored in-depth throughout the semester. Students gain a new awareness about historiography and theories that highlight this growing subfield of American history. Prominent topics covered in lecture and readings include colonization, slavery, suffrage, immigration, sovereignty, labor, ghettoization, art, literature, culture, and the rise of self-determination. Study the intersection of race, class, and gender relations through multiple perspectives of region, ideology, political-economy, and religion.

HIST 3351. The U.S. Presidency Since 1900. (SS; 4.0 cr.; fall, even years)
History of the 20th-century U.S. presidency. Brief consideration of the Presidency before 1900, analysis of performance of presidents since 1900 in roles of chief executive, commander-in-chief, chief diplomat, and chief of state during an era of enlarged governmental functions at home and world power abroad.

HIST 3353. World War II. (HIST; 4.0 cr.; fall, spring, offered periodically)
Origins, political and military aspects of the war in Europe and Asia, domestic mobilization, the Holocaust and Atomic Bomb, aftermath.

HIST 3355. United States in Transition, 1877-1920. (HIST; 4.0 cr.; spring, odd years)
Topics, themes, and problems in U.S. history, 1877 to 1920.

HIST 3356. Civil Rights Movement, 1954-1974. (HIST; 4.0 cr.; fall, spring, offered periodically)
Background of the Civil Rights movement, emergence of the theory and practice of nonviolence, various Civil Rights groups, role of women, legislative and other accomplishments of the movement, its aftermath and influence.

HIST 3358. Civil War and Reconstruction. (HIST; 4.0 cr.; fall, spring, offered periodically)
Origin, context, and significance of the Civil War and Reconstruction.

HIST 3359. Native Strategies for Survival, 1880-1920. (HDIV; 4.0 cr.; fall, odd years)
Exploration of the events and policies that sought to eliminate American Indian communities and cultures and the strategies that American Indians developed to survive. Students gain insight into a pivotal time for the "incorporation" of the United States and ongoing tensions between unity and diversity that characterize the nation's political economy and social structure. Paradoxes under scrutiny include the degree to which policies claiming to emancipate actually imprisoned and prisons became homelands.

HIST 3360. American Experience in World War II. (HIST; 4.0 cr.; prereq jr or sr yr; #)
Seven former American Presidents were veterans of World War II and over 175,000 books have been published on this subject alone. Arguably this one event has commanded more attention by writers, filmmakers, and academics than any other modern historical event. Historians have also debated the significance of World War II. After the conclusion of the war, the worldwide devastation and loss of life had reached apocalyptic proportions and new military technologies, like the atom bomb, forever altered the American experience. Scientists and intellectuals, such as Albert Einstein, emerged as celebrities. Literally every sector of American society and culture had been transformed by World War II. Investigate these questions and more throughout the semester. It is important to note that this course is not a strict military history of the European and Pacific campaigns. Instead, the purpose of this class is to challenge students to grapple with the historic origins and legacies of the war.

HIST 3361. An Environmental and Geographic History of the United States. (ENVT; 4.0 cr.; fall, spring, offered periodically)
A broad examination of how humans interacted with their natural world throughout American history. Combined emphasis on cultural ecology (the study of how various cultural groups shaped the American landscape) with political ecology (the role of the nation's political economy in driving environmental change). Possible topics include: the Columbian Exchange, European and American Indian conflict, Thoreau and the creation of an environmental ethic, the slaughter of the bison as an ecological tragedy, urbanization and environmental racism, conservation as a political movement and the development of environmental policy, ethnic minorities, American religion and the environment, the politics of global climate change. [Note: no credit for students who have received cr for Hist 2361]

HIST 3453. The American Presidency, 1789-1900. (HIST; 4.0 cr.; fall, spring, offered periodically)
Growth and development of the U.S. presidency during its first century. Emphasis on selected presidencies such as those of George Washington, Thomas Jefferson, Andrew Jackson, James K. Polk, Abraham Lincoln, and William McKinley.

HIST 3455. American Immigration. (HIST; 4.0 cr.; spring, offered periodically)
The role of immigration in U.S. history from the late 18th century to the present. Emphasizes on settlement, ethnicity, nativism, transnational issues, and immigration law. Possible topics include European immigrants and "whiteness;" restriction of immigration from Asia, ethnicity and U.S. foreign and military policy, and the varieties of immigration, legal and undocumented, since 1965.

HIST 3456. History of Religion in America. (HIST; 4.0 cr.; fall, spring, offered periodically)
The history of religion in American life from the perspective of ordinary Americans. Religious diversity receives special emphasis. Topics may include New England witchcraft, the First and Second Great Awakenings, American Indian belief systems, nativism and Anti-Catholicism, religion and politics, immigrant religion and new fundamentalist movements.

HIST 3464. History of Suburban America. (HIST; 4.0 cr.; fall, spring, offered periodically)
Overview of development of the suburban landscape within the United States, from the beginning of the 19th century to the present, with primary focus on post-World War II development. Topics include the importance of nature to the idea of a suburb, the role of technology (such as streetcars and automobiles) in development, racial and ethnic diversity and exclusion within the landscape, the effect of suburbs on gender roles, and the political and cultural relationship between the city and the suburb. Examine how the suburb is depicted within popular culture, including films, television programming, music, and literature of the past and present.

HIST 3465. History of the American Family. (HIST; 4.0 cr.; spring, offered periodically)
Examination of the history of the American family from the colonial period to the present. One focus is demographic and explores changes in family size and structure due to economic change and modernization. Also examined are altered relationships within families, as the nuclear family became more democratic and affectionate, as the position of women within American life changed, as people began to practice different methods of family limitation, and as childhood and adolescence were recognized as distinctive life course phases. Additional topics include the role of class and cultural differences in defining family systems, shifting gender and sexual norms, the rise of unrelated individuals, and the aging of the population, etc.

HIST 3557. East Asia Since 1800. (IP; 4.0 cr.; fall, spring, offered periodically)
Examination of the social, political, economic, technological, and cultural changes in East Asia [China, Japan, and Korea] since 1800.

HIST 3561. The Pacific War in East Asia. (HIST; 4.0 cr.; fall, offered periodically)
Political, military, social, and cultural history of the Pacific war in East Asia. Exploration of different perspectives and wartime experiences in China, Japan, and the Japanese empire (including Korea). Emphasis on the impact of the war as a watershed period in the history of East Asia. Topics may include the Rape of Nanjing, the bombing of Hiroshima, the Manchurian Incident, and the creation of Manchukuo, collaboration, and resistance, wartime mobilization and propaganda, Zen nationalism, and comparisons with Nazi
Humanities (HUM) Division of Humanities

HUM 1002. Norse Saga. (HUM; 4.0 cr.; fall, spring, offered periodically) Study of medieval sagas, in translation, from Iceland and Norway, and the culture that produced them.

HUM 1006. From the Caesars to the Saints: Walking Ancient Rome. (HIST; 4.0 cr.; summer, offered periodically) While taking in the culture of modern-day Italy, students visit important ancient monuments in and around Rome as well as the city’s museums. Students read ancient and modern authors, keep a daily journal, give an oral presentation about an ancient site, and write a final paper tying together the knowledge they gain from this program.

HUM 1021. Popular Culture and American Politics. (SS; 3.0 cr.; fall, spring, every year) This course is an introduction to American politics and popular culture since the 1940’s, exploring the relationship between the two themes. It will especially cover political movements where pop culture plays an important role pushing social change, such as in the civil rights movement, 1960’s counterculture, and feminism. The primary objectives of this course to analyze the popular arts as not just an entertainment source but as a force that is shaped by and subsequently shapes American society.

HUM 1051. Greek Drama. (HUM; 4.0 cr.; spring, offered periodically) Study of Greek drama.

HUM 1305. Career Preparation in World Languages. (1.0 cr.; spring, every year) Students advance their understanding of the liberal arts, bilingual skills, and a global and interconnected labor market by developing a professional profile and associated materials in the target language and English including a curriculum vitae (CV), resume, and cover letters. Ideally completed in the junior year to allow ample time for career exploration.

HUM 1805. Myth: From the Page to the Stage. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, spring, offered periodically) Grab a thunderbolt and explore the rich mythology of world mythology by reading, researching, discussing, creating, and acting. Students familiarize themselves with important myths from various cultures around the world. Students use theatre techniques to creatively engage in classroom role-playing activities as well as projects such as a myth mask, future myth, and a myth collage. At the end of the semester, students perform a short original play focusing on one of the myths studied in class.

HUM 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

HUM 2001. Introduction to Human Services. (SS; 4.0 cr.; prereq Psy 1051 or Soc 1101 or Anth 1111 or Pol 1201; fall, every year) Introduces students to the field of Human Services by discussing the field’s history and relevant theories. Students learn about the structure and dynamics of organizations, communities, and society as well as the nature of individuals and groups. The human conditions (e.g., aging, delinquency, crime, poverty, mental illness, physical illness, and developmental disabilities) that provide the focus for human service professionals are also discussed.

HUM 2051. Introduction to Cultural Diversity. (HUM; 4.0 cr.; prereq 1001 or equiv; fall, offered periodically) An introduction to the study of human culture, its development, and the diversity of human societies.

HUM 3001. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

HUM 3601. Great Books in Latin American History. (IP; 4.0 cr.; fall, every year) A look at Latin American history through great books.

HIST 2001. Introduction to History. (HIST; 4.0 cr.; fall, offered periodically) Examination of social revolution in 20th-century Latin America. Particular attention paid to social revolution in Mexico, Bolivia, Cuba, and Nicaragua. Populism, democratic attempts at social revolution, and counterrevolution in other parts of Latin America also considered. Key issues include imperialism, capitalism, communism, nationalism, and the Cold War.

HIST 3601. Latin American Revolutions in Historical Perspective. (IP; 4.0 cr.; fall, spring, offered periodically) Examination of the history of U.S.-Latin American relations from U.S. independence to the present. Focuses on the political, economic, social, and cultural relationships between the two.

HIST 3614. Race and Ethnicity in Latin America. (HDIV; 4.0 cr.; fall, spring, offered periodically) Explore issues of race and ethnicity in Latin America from a historical perspective. Covering the colonial and national periods, examine how ideas of race and ethnicity have intersected with political, economic, and socio-cultural developments in the region. Consider the ways in which race, class, and gender have intersected in Latin America.

HIST 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

HIST 4001. Senior Research Seminar in History. (4.0 cr.; A-F only; prereq 2001, #; fall, spring, every year) Advanced historical thematic analysis and guided research resulting in an original, substantial paper or project.

HIST 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

HUM 1016. From the Caesars to the Saints: Walking Ancient Rome. (HIST; 4.0 cr.; summer, offered periodically) While taking in the culture of modern-day Italy, students visit important ancient monuments in and around Rome as well as the city’s museums. Students read ancient and modern authors, keep a daily journal, give an oral presentation about an ancient site, and write a final paper tying together the knowledge they gain from this program.

HUM 4102. Linguistics for Students of Literature. (HUM; 4.0 cr.; prereq jr or sr status; spring, offered periodically) Course offers an introduction to language-based approaches to literature. Directed at literature majors (in any language) to enhance close reading through the linguistic analysis of literary language. Topics will include syntax, phonetics, metaphor, speech act theory, sociolinguistics (non-standard dialects), and metrics/prosody.

HUM 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Interdisciplinary Studies (IS) Academic Affairs

IS 1041. Health Sciences Terminology. (2.0 cr.; fall, summer, every year) A self-study course that has been designed to provide students with a working knowledge of the terminology utilized in the health sciences. There are no formal class sessions. Students take four tests during the term.

IS 1051. Introduction to College Learning Skills. (4.0 cr.; S-N or Audit; prereq participation in Gateway Program or #; summer, every year) Essential skills for success in higher education. Introduction to computing technology, writing, and math skills. Academic and social skills needed for transition from high school to college. [Note: counts toward the 60-cr general ed requirement]

IS 1061. Mastering Skills for College Success. (2.0 cr.; S-N only; prereq #; fall, spring, every year)
Practical assistance to develop efficient, effective learning/academic performance skills. Improve reading, memorization, test-taking, critical thinking; identify academic and career learning styles, motivation, life skills, and their relation to successful academic performance.

**IS 1071. Systematic Introduction to the Art and Science of Emergency Medical Care.** (4.0 cr.; S-N only; prereq registration with the Stevens County Ambulance Services; arrangements must be made by contacting them at 320-589-7421; fall, spring, every year) Introduction to emergency medical care. Develops skills and knowledge to respond appropriately to a medical emergency. (The Stevens County Ambulance Service sets and requires an independent fee.)

**IS 1091. Ethical and Social Implications of Technology.** (E/CR; 2.0 cr.; fall, spring, every year) Description of appropriate technological advances. Historical development related to technology and its development cycle. Discussion of the ethical and social implications of technology.

**IS 1802. Music, Education, and the Liberal Arts.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) What is a liberal arts education, and how does music fit into this idea? How does one succeed in such an environment? Explore the liberal arts approach and the role of music in education. This course also helps students to develop skills that are crucial to success in a liberal arts college environment.

**IS 1803. Dangerous Minds: Images of Education in Popular Culture.** (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Are college students always drunk? Do faculty members routinely have affairs with students? Can marginalized students triumph over adversity in high school? Should a college education be free for anyone who wants to attend? Are sports overemphasized in schools? These are only a sampling of the questions the class will explore by putting a critical lens up to technology and its development cycle. Discussion of the ethical and social implications of technology.

**IS 1804. Community Engagement: From Volunteerism to Social Justice.** (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Introduction through readings and discussion to multiple frameworks for community engagement, ranging from meeting individual people's and agency's needs through direct volunteerism to engaging in research and direct action intended to create systematic change. In the process of studying these frameworks, students are exposed to a variety of controversies in the service-learning field. Students are also introduced to Stevens County through field trips to community agencies. Students complete a community engagement project that reflects their academic and professional goals and meets community needs. Projects can range from volunteering directly at an agency to planning a fundraiser or educational event with a partner to completing a manageable community-based research project. [Note: requires off-site meeting times to be arranged]

**IS 1806. Bottom Dwellers in an Ocean of Air.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, odd years) We live on the bottom of an ocean of a mix of gases and vapors which is kept in constant, chaotic motion by uneven heating and planetary rotation, thus evading our control. We, as humans, are often on the defense or in a role of passive adaptation with regard to weather. Are human beings victims or actors on the stage of global atmospheric dynamics? Striving to assemble an answer to this question, students in the course: (1) mine human history for cases in which significant interaction between human society and climate was found; (2) study individual events in which history and weather were intertwined; (3) learn about paleoclimate research; and (4) pay particular attention on how this interaction between society and atmosphere is shaped in the modern world. The physical principles of weather and climate are introduced as needed for meaningful discussion.

**IS 1808. Agents and Agency: Modeling Emergence in the Social Sciences.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Agent-based modeling is a computer-based technique for investigating how complex systems can emerge from the behaviors of the people (or other agents) that form the system. Agency is the ability to act according to one's own will, rather than following social and cultural rules of behavior. Can aspects of human societies "emerge" from many simple interactions between agents, constantly repeated? Or are human choices responsible for the structure and attributes of human societies? Is there really a difference, or are these two ways of looking at the same phenomenon? Explore the potential and pitfalls of agent-based modeling as a technique for understanding human societies, through a mixture of readings, discussion, and the hands-on development of small-scale computer models. No previous technical or programming experience necessary.

**IS 1810. Global Flashpoints.** (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Focus on information literacy by engaging with a select range of unfolding world events. Students are mutually responsible for providing insight and context into these events. The course promotes global citizenship while teaching information literacy skills.

**IS 1811. Beyond Shushing: Libraries in the 21st Century.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Through readings, discussion, writing, and a service learning project, this class explores the role of libraries and literacy in the 21st century, focusing on the cultural, intellectual, and economic value of literacy. [Note: off-campus meetings required]

**IS 1812. As We Beg, Borrow, and Steal: Sampling, Quoting, and Appropriation in the Digital Age.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Explore the history of borrowing, quoting, and appropriation in the creation of cultural artifacts such as visual arts, music, writing, film, and scientific research, as well as the impact of digital technologies on these trends today. Students create new artifacts using appropriation techniques to both illustrate and comment on these issues.

**IS 1814. Big Ideas in Science.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Explore big ideas in science, including the major theories that are the foundations of our current understanding of the universe. Dive into Atomic Theory, Plate Tectonics, Periodic Law, Evolution, and the Big Bang Theory.

**IS 1816. Why We Eat What We Eat.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Explores the biological, historical, and cultural origins of eating patterns in the United States and the wider world and the health and environmental consequences of those eating patterns. Students document and reflect upon their own eating patterns and culinary traditions. Current controversies in food production and nutrition are examined. [Note: one evening meeting required]

**IS 1993. Directed Study.** (1.0-5.0 cr. [max. 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**IS 2001H. Honors: Traditions in Human Thought.** (HUM; 2.0 cr.; prereq participation in the Honors Program or #; fall, every year) A study of a selection of significant works from history, literature, philosophy, science, and religion across continents from the earliest writings to the present day. Critical reading, writing, and discussion in an interdisciplinary context are emphasized.

**IS 2023. Fine and Performing Arts of London.** (FA; 2.0 cr. [max 6.0 cr.]; summer, offered periodically) A 14-day arts and culture tour of London. Admission to major museums and theatres highlights the diversity of London’s arts and cultural traditions. Includes tours of the city: Buckingham Palace, Westminster, St. Paul’s Cathedral, Abbey Road, Carnaby Street, and Portobello Road. Provides tickets for a variety of theatrical performances: Shakespeare’s
IS 2035. Aging in Greece: Comparative Cultural Practices and Social Policy. (IP; 4.0 cr.; spring, offered periodically) International service-learning course in Athens and the island of Ikaria that explores cross-cultural differences between Greece and the United States in the meaning and experience of aging, as well as in the social and institutional supports for the aging population. Focus on the role of the community and public sector in promoting optimal aging. Students spend two hours per day in the classroom and 4-6 hours per day at a nursing home.

IS 2993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

IS 3053. Irish Texts and Contexts. (ENVT; 1.0-6.0 cr.; SS; 1.0-6.0) This study abroad course explores the intimate relationship between Irish literature and geographical features that gave prehistoric Ireland its shape. Students gain a valuable understanding about the historical social structures of rural society and witness these structures firsthand. [Note: meets the SS general education requirement if taken for 2 or more cr]

IS 3111H. Honors: The End of the World as We've Known It: The Apocalypse Then and Now. (SS; 2.0 cr.; prereq participation in Honors Program or #; spring, offered periodically) Exploration of the occasions and representations of apocalyptic views, focusing on the historical, political, and psychological implications. Antecedents and effects of end-of-the-world prophecies are explored through the perspectives of history, science, culture, and art. Examples might include Descartes, Newton, Locke, Hume, Hobbes, Rousseau, Voltaire, Lavoisier, d'Holbach, and Blake.

IS 3203H. Honors: A Cross-Section of the Enlightenment. (HIST; 2.0 cr.; prereq participation in Honors Program or #; fall, spring, offered periodically) A cross-section of the cultural and intellectual history of the 18th century. Figures to be studied may include Descartes, Newton, Locke, Hume, Hobbes, Rousseau, Voltaire, Lavoisier, d'Holbach, and Blake.

IS 3204H. Honors: Ecological Health and the Sustainability of Common-Property Resources. (ENVT; 2.0 cr.; prereq participation in Honors Program or #; fall, spring, offered periodically) Exploration of "sustainability" from the perspective of economics and ecology. Examples might include ocean fisheries, the rain forest, the introduction of alien species, and the global climate.

IS 3206H. Honors: Introduction to Game Theory. (M/5R; 2.0 cr.; prereq participation in the Honors Program, high school higher algebra or #; fall, spring, offered periodically) Introduction to the formal theory of strategic interaction and to the intuitions behind the theory. Applications to a selection of problems in the natural and social sciences, such as biological evolution, tacit collusion in pricing, strategic behavior in international relations, and strategy in legislative voting. [Note: credit will not be granted if credit has been received for Econ 3041]

IS 3209H. Honors: Apocalypse Now? The Science and Policy of Preparing for a Catastrophe. (ENVT; 2.0 cr.; prereq participation in Honors Program or #; fall, spring, offered periodically) Popular visions, policy response, and scientific underpinnings of potentially catastrophic societal problems past and present. Do we worry about the right things? How do scientists, politicians, and purveyors of popular culture assess which threats warrant attention? (two 50-min lect/disc plus multiple evening film screenings)

IS 3211H. Honors: Republic or Empire? The American 1890s. (HIST; 2.0 cr.; prereq participation in the Honors Program or #; fall, spring, offered periodically) The 1890s are often seen as a cultural watershed for the United States. Depression, political movements, and a "splendid little war" against Spain and the Philippines represent only the surface of a decade which altered aspects of culture, class, gender, and literary sensibility.

IS 3212H. Honors: Global Encounters and the Making of the Contemporary World, 1450 to the Present. (HDIV; 2.0-4.0 cr.; prereq high school higher algebra, participation in Honors Program or #; spring, offered periodically) An exploration of the initial interaction among the indigenous peoples of Africa and the Americas with the people of Europe. Parallel immediate and long-term effects of these initial encounters are identified and discussed.

IS 3214H. Honors: Evolution and Culture of Human Aggression. (HUM; 2.0 cr.; prereq participation in Honors Program or #; fall, offered periodically) Exploration of aggression in medieval literature and culture and theorization about the adaptiveness of aggression. Group and individual aggression expressed by humans living under current conditions is explored from a cultural and evolutionary perspective.

IS 3215H. Honors: Sagas before the Fall: Culture, Climate, and Collapse in Medieval Iceland. (ENVT; 2.0 cr.; prereq participation in Honors Program or #; fall, offered periodically) Exploration of the literary and physical record of society in Viking-age Iceland from its settlement during the Medieval Warm Period, through centuries of environmental degradation and changing religion, to the onset of the Little Ice Age and the end of the Icelandic free state.

IS 3216H. Honors: Perspectives on Disability in Contemporary American Life. (HDIV; 2.0 cr.; prereq participation in Honors Program or #; fall, offered periodically) Introduction to the interdisciplinary field of disability studies, which favors a social rather than medical approach to understanding difference. History and struggle for civil rights, identity issues, contemporary controversies, and exploring the frontiers of one's own interest in disability by means of a service learning project.

IS 3217H. Honors: The Trial of Galileo. (HIST; 2.0 cr.; prereq participation in Honors Program or #; spring, offered periodically) The dispute between Galileo and the Inquisition produced one of history's most notorious trials, an enduring symbol of the struggle between science and religion. Study of the complicated history behind the myth by re-enacting the trial and learning about the theology, science, and cultural politics of this tumultuous period.

IS 3234H. Honors: Intersections of Art and Science. (FA; 2.0 cr.; prereq participation in Honors Program or #; spring, offered periodically) Explores the intersection of scientific discovery and aesthetic innovation, especially the ways...
in which scientists and artists have influenced one another's work. Examines the ways in which these different pursuits value notions of creativity.

**IS 3235H. Honors: Politics and Film.** (HUM; 2.0 cr.; prereq participation in Honors Program or #; spring, offered periodically) Explores age-old questions of political science and philosophy—what is justice, what does citizenship mean, what is power, how do we relate to the "other"—through the lens of film. Examines American and foreign films and a variety of filmmakers to analyze effects of different cinematic and narrative techniques on our interpretations.

**IS 3236H. Honors: Representations of Writers and Artists.** (HUM; 2.0 cr.; prereq participation in the Honors Program or #; fall, offered periodically) An interdisciplinary approach is used in exploring the varied ways writers and artists are represented in books, television, film, and other media, comparing these representations with the lives and experiences of contemporary working writers and artists.

**IS 3237H. Honors: The Power of Place: An Interdisciplinary Approach to Where We Live.** (ENVT; 2.0 cr.; prereq participation in the Honors Program or #; spring, offered periodically) Goes beyond the image and myth of Lake Wobegon in examining the past and present of West Central Minnesota. An intensely interdisciplinary focus on environmental, social, political, and economic change and how modern global forces play out in this specific setting. Community leaders and experts play an active role in lecture and discussion.

**IS 3238H. Honors: In Search of Nietzsche.** (IP; 4.0 cr.; prereq participation in Honors Program or #; fall, offered periodically) In this interdisciplinary course, read some books by and novels about Nietzsche in order to discover who this remarkable man was. Authors to be discussed: Nietzsche, D.H. Lawrence, Richard Wright, Milan Kundera, Nicholas Mosley, and Irvin D. Yalom.

**IS 3239H. Honors: The Anatomy of Development and the "Common Good": Sardar Sarovar Dam in Gujarat, India.** (SS; 2.0 cr.; prereq participation in the Honors Program or #; summer, offered periodically) In the Global South, the unspoken basis of development projects is that they represent an attempt to serve the "common good." This assumption masks a torrent of disagreement and conflict about whose common good is served and how a particular project in question (e.g., dams, irrigation, introduction of new farming techniques) "develops" the nation.

**IS 3240H. Honors: Proud Decade or Dark Age? The American 1950s.** (HIST; 2.0 cr.; prereq participation in Honors Program or #; fall, spring, offered periodically) Many old enough to remember the American 1950s look back on them with nostalgia. Some do not. This seminar studies several aspects of the decade: the Cold War at home and abroad, American society, literature, and popular culture. Student presentations focus on biographical research. 

**IS 3241H. Honors: Worldviews.** (SCI; 4.0 cr.; prereq participation in the Honors Program or #; fall, spring, offered periodically) The Copernican Revolution, culminating in Newton’s System of the World, and modern cosmology beginning with the work of Einstein, Hubble, Friedmann, Lemaître, and Gouy, culminating in the contemporary theory of the universe’s accelerated expansion.

**IS 3242H. Honors: Two Cosmological Poets: Dante and Lucretius.** (IP; 2.0 cr.; prereq participation in the Honors Program or #; fall, offered periodically) Explore, compare, and contrast the cosmological poems "On the Nature of Things" (De Rerum Natura, DRN) of Titus Lucretius Carus (ca. 98-55 BCE) and "The Divine Comedy" (Commedia) of Dante Alighieri (1265-1321 CE). The two poets diverge on almost every aspect of cosmological outlook and notion of the moral life and right living.

**IS 3243H. Honors: Dialogues and the Ancient World.** (HUM; 2.0 cr.; prereq participation in the Honors Program or #; fall, offered periodically) Examination of a number of literary dialogues from the ancient, medieval, and early modern periods in order to better understand what the genre of dialogue is. Discussion of the literary and historical issues raised by these dialogues to explore some of the key topics of antiquity and the Middle Ages and to see how these topics continue to affect modernity.

**IS 3244H. Honors: Fascism, the Resistance, and Their Legacy in Contemporary Italy.** (IP; 2.0 cr.; prereq participation in Honors Program or #; fall, spring, offered periodically) Study of Italian Fascism and the Resistance and the continued significance these two phenomena have for contemporary Italian identity. Primary texts include historical documents together with works of literature and film. Students have the opportunity to research the topic of resistance to oppressive regimes in other national contexts.

**IS 3245H. Honors: Archaeology Mythbusting.** (SS; 2.0 cr.; prereq participation in the Honors program or #; spring, offered periodically) This honors class explores the world of popular representations of the past, and whose myths and pseudoscience are so prevalent in fraud, from Atlantis to aliens. Discuss why such characters are so common in popular culture. Some do not. This seminar studies several aspects of the decade: the Cold War at home and abroad, American society, literature, and popular culture. Student presentations focus on biographical research.

**IS 3247H. Honors: Heroes of Ancient Greece and Rome.** (HUM; 2.0 cr.; prereq participation in Honors Program or #; fall, offered periodically) Explores common types of heroes found in ancient Greek and Roman mythology and literature. Discuss such questions as: What makes a character a hero? What kinds of real-world issues did literary heroes help Greeks and Romans think about? Were they meant to be emulated? How might they be relevant to the modern world?

**IS 3710. Peer Tutoring in College.** (1.0 cr. [max 3.0 cr.]; S-N only; fall, every year) Tutor students in selected courses.

**IS 3720. Tutoring Writing Across the Disciplines.** (1.0-2.0 cr. [max 6.0 cr.]; S-N only; fall, spring, every year) Tutor student writers at the Writing Room; meet regularly with other tutors for ongoing training in peer writing tutoring.

**IS 3796. Interdisciplinary Internship in the Helping Professions.** (1.0-16.0 cr. [max 32.0 cr.]; S-N only; fall, spring, summer, every year) One-semester educational experience providing field applications in the helping professions (social work, counseling, casework, child protection services, educational settings, human resource counseling, and the like) for the student's theoretical classroom learning experiences. Prereq-psych 4102, approved internship form; Psy 4101 recommended.

**IS 3800. Practicum in Social Sciences.** (1.0-2.0 cr. [max 4.0 cr.]; S-N only; fall, spring, every year) Supervised experience of selected learning activities such as discussion group leader, lab assistant, research assistant, or other teaching-related activities.

**IS 3810. Practicum in the Humanities.** (1.0-2.0 cr. [max 4.0 cr.]; S-N only; fall, spring, every year) Supervised experience of selected learning activities such as discussion group leader, test review editor, research assistant, or other teaching-related activities.

**IS 3893. Prior Learning Directed Study.** (1.0-4.0 cr. [max 10.0 cr.]; fall, spring, every year) Individualized learning project combining prior learning with faculty-directed new learning, awarding academic credit for both. (When content is discipline-related, discipline designation will appear on transcript and credit may count toward appropriate general education requirement category.)

**IS 3896. Prior Learning Internship.** (1.0-16.0 cr. [max 32.0 cr.]; S-N only; fall, spring, every year) An educational experience in a work environment providing field application for the student's theoretical classroom learning experiences. The prior learning internship, such as in social service or business settings, occurred prior to the student's matriculation. The prior learning is documented and combined with faculty-directed new learning, with credit awarded for both.

**IS 3991H. Honors Co-Curricular Independent Study.** (1.0-2.0 cr. ; A-F only; fall, spring, every year) Co-curricular honors credits may be earned by writing a paper that explores a co-curricular experience such as study abroad, off-campus internship, national student exchange, service-
ITAL 1001. Beginning Italian I. (4.0 cr.; fall, every year)

Introduction to Italian as it is presently spoken and written. Basic sounds, structures, and vocabulary of Italian. Understanding, reading, and writing the language and communicating in Italian about everyday situations. Relationship between culture and language.

ITAL 1002. Beginning Italian II. (FL; 4.0 cr.; prereq 1001 or placement or #; spring, every year)

Continuation of 1001.

ITAL 1104. Major Works of Italian Literature in Translation from the Middle Ages to the Present. (HUM; 4.0 cr.; spring, offered periodically)

Survey of Italian literature from the Middle Ages to the present. Attention given to major works of narrative, poetry, and drama of various periods. Emphasis on ground-breaking works that constituted a challenge to prevailing literary and cultural values. This course is conducted in English; all texts will be read in English translation.

ITAL 1105. Italian Cinema. (IP; 4.0 cr.; spring, offered periodically)

Study of Italian cinema from the silent era to the present, focusing on significant genres and directors, as well as on critical approaches to film studies. Taught in English; all films have English subtitles.

ITAL 1311. Modern Italy through Literature and Film. (HUM; 4.0 cr.; spring, offered periodically)

The political, social, and cultural transformations of Italy from 19th-century unification to contemporary issues of immigration and multiculturalism as reflected in literature and film. Topics include forging a national identity; Fascism, the Resistance and post-war period; the "southern question"; the "economic miracle"; current cultural issues.

ITAL 1331. The Eternal City: The Language and Culture of Rome I. (FL; 4.0 cr.; summer, offered periodically)

Beginning course for UMM study abroad in Rome, Italy. Four weeks of Italian language together with the art and literature of Rome. Emphasis on works of art, literature, and film belonging to several periods and addressing the history and character of the city. Excursions to relevant sites in and near Rome. No previous experience in Italian required.

ITAL 1801. Rome: The City in Literature and Film. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)

Study of representations of the city of Rome in significant works of Italian literature and film. Topics include the rhetorical construction of national and cultural identities, the individual's relationship to fictional and lived space, the city as stage for major cultural and political preoccupations of contemporary Italy. Conducted in English.

ITAL 1993. Directed Study. (1.0-5.0 cr.; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ITAL 2001. Intermediate Italian I. (IP; 4.0 cr.; prereq 1002 or #; fall, spring, offered periodically)

Continued development of listening, reading, writing, and speaking skills; review of the fundamental elements of the Italian language. Emphasis on authentic cultural and literary texts appropriate to this level.

ITAL 2993. Directed Study. (1.0-5.0 cr.; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

ITAL 3331. The Eternal City: The Language and Culture of Rome II. (IP; 4.0 cr.; summer, offered periodically)

Advanced course for UMM study abroad in Rome, Italy. Four weeks of Italian language together with the art and literature of Rome. Emphasis on works of art, literature, and film belonging to several periods and addressing the history and character of the city. Excursions to relevant sites in and near Rome. Prereq-1302 or equiv.

ITAL 4993. Directed Study. (1.0-5.0 cr.; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Language (LANG) Division of Humanities

LANG 1063. Academic Culture and Oral Skills in the American University. (2.0 cr.; [max 4.0 cr.]; S-N only; prereq non-native speaker of English, #; fall, spring, every year)

For non-native speakers of English. Course focuses on developing and reinforcing essential reading skills including vocabulary strategies/word studies; identifying elements of the text to support comprehension; critical thinking and analysis; and more micro-skills such as predicting, skimming, scanning and inferring.

LANG 1064. Preparing for the American Liberal Arts Classroom. (3.0 cr.; S-N only; prereq non-native speaker of English; admission to UMM; #; summer, every year)

Prepares international students for norms and rigors of English-language, liberal arts college classroom. Includes preparation in language/academic skills of reading, writing, oral skills; exposure to disciplines that compose liberal arts; developing familiarity with cultural norms of a U.S. classroom; contextualization of topics through field trips.

Language Education Methods (LANE) Division of Education

LANE 4123. Methods of Teaching Foreign Language K-12. (4.0 cr.; A-F only; prereq admission to the SeEd or EIEd teacher education program; coreq SeEd 4102, SeEd 4103, SeEd 4104, SeEd 4105 or prereq EIEd 3202, EIEd 3212; fall, every year)
Latin (LAT)

Division of Humanities

LAT 1001. Beginning Latin I. (4.0 cr.; fall, every year)
Study of Latin vocabulary and structures in order to attain basic reading and writing competence; practice in oral recitations and compositions. Introduction to ancient Roman history and culture.
Continuation of 1001.

LAT 1002. Beginning Latin II. (FL; 4.0 cr.; prerequisite 1001 or placement test; spring, every year)

LAT American Area Studies (LAAS)

Academic Affairs

LAAS 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

LAAS 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

LAAS 3100. Contemporary Latin America. (1.0 cr. [max 8.0 cr.]; prerequisite LAAS major; fall, spring, every year)
Opportunity for LAAS majors to read about and discuss in historical and cultural contexts the more important contemporary developments in Latin America. [Note: to be repeated each semester a student is in residence; only 4 cr may apply to LAAS major]

LAAS 3201. Bibliographical Tools and Journals in Latin American Area Studies. (2.0 cr.; prerequisite LAAS major; fall, spring, offered periodically)
For the student new to the major. Introduction to the standard bibliographical tools and journals in Latin American area studies.

LAAS 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

LAAS 4901. Senior Capstone in Latin American Area Studies. (2.0-4.0 cr.; A-F only; prerequisite 3201, or LAAS major; #; fall, spring, offered periodically)
A capstone experience for LAAS majors. Individual reading and development of an original research paper in consultation with the LAAS coordinator. With approval of the LAAS coordinator and another faculty member, a capstone experience in a different discipline that contains primarily Latin American content may be wholly or partially substituted for LAAS 4901, but requires completion of four total credits.

LAAS 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Management (MGMT)

Division of Social Sciences

MGMT 1011. Fundamentals of Personal Finance. (SS; 2.0 cr.; spring, offered periodically)
An application-based personal finance course to help students with lifetime financial planning and decision making. Focus on personal responsibility with respect to understanding financial instruments and their functions including: stocks, bonds, money markets, mutual funds, and derivatives. Also learn about savings, retirement, and social insurance vehicles including social security, Medicare, defined contribution, and defined benefit plans along with various individual retirement accounts. A way of thinking about personal finance that incorporates knowledge of current financial institutions, structures, and markets; time value of money; risk analysis; and available budgeting tools.

MGMT 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MGMT 2101. Principles of Accounting I. (4.0 cr.; fall, every year)
An introductory course in accounting principles and practices. The students develop an understanding of both the conceptual and procedural framework of the accounting processes. Emphasis is placed on the preparation and communication of accounting information and the financial statements for a proprietorship.

MGMT 2102. Principles of Accounting II. (2.0 cr.; prerequisite 2101; spring, every year)
A continuation of Principles of Accounting I. Students develop an understanding of the issues unique to partnerships, corporations, and organizational financing. Cash flow statements and performance analysis are also emphasized.

MGMT 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MGMT 3101. Financial Management. (SS; 4.0 cr.; prerequisite 2102, Econ 1111, Econ 1112, Stat 1601; fall, every year)

MGMT 3102. Financial Institutions. (SS; 2.0 cr.; prerequisite 2101, Econ 1111, Econ 1112; spring, offered periodically)
An introduction to the functioning and management of financial institutions such as: the banking industry, mutual fund industry, insurance companies, pension funds, investment banks, and venture capital firms.

MGMT 3123. Managerial Economics. (SS; 4.0 cr.; prerequisite 2101, Econ 1111, Math 1101 or Math 1021, Stat 1601 or Stat 2601 or #; spring, every year)
Development of the basic concepts of the microeconomic theories of consumer behavior, the firm, and market structure, in application to managerial decision-making contexts in the operation and control of business and non-profit organizations. [Note: no credit for students who have received credit for Econ 3201]

MGMT 3133. Managerial Accounting. (4.0 cr.; prerequisite 2102; fall, spring, offered periodically)
Managerial accounting is designed to help managers assess needed information to carry out three essential functions in an organization: planning operations, controlling activities, and making decisions. The emphasis of this course is placed on cost behaviors, various product costing methods, cost-volume-profit relationships, budgeting and control through standard costs, and other quantitative techniques used by management.

MGMT 3134. Cooperative Business Model. (2.0 cr.; = ECON 3134; prerequisite Econ 1111 or #; spring, even years)
Same as Econ 3134. In the northern plains of the United States, cooperative businesses, including consumer, producer, and worker cooperatives, have made significant contributions to economic growth and development. Identify the unique economic, legal, and organizational characteristics of these firms and their role in the economy. Special attention is given to the potential role of cooperative business organizations in community development.

MGMT 3141. Business Law I. (2.0 cr.; prerequisite 2101 or #; spring, every year)
Law as it relates to the commercial world, including the legal environment, federal regulation, contracts, intellectual property law, business torts, and white collar crimes.

MGMT 3142. Business Law II. (2.0 cr.; prerequisite 2101 or #; spring, every year)
Law as it relates to the commercial world, including the mortgage foreclosure crisis, business organizations, corporations, secured transactions, bankruptcy, agency and securities regulations.
MGMT 3151. Human Resources Management I. (E/CR; 2.0 cr.; prereq 2101 or #; fall, every year)
An introduction to the functional areas of human resource management through the use of case studies. Topics include legal issues, planning, recruitment, training, evaluation, compensation, and benefits.

MGMT 3152. Human Resources Management II. (HDIV; 2.0 cr.; prereq 3151 or #; fall, every year)
Topics in human resource management: evaluating employee performance, training, safety, labor relations, international human resource management.

MGMT 3161. Labor Management Relations I. (E/CR; 2.0 cr.; prereq Econ 1111 or #; fall, spring, offered periodically)
Historical development of labor relations and the legal framework governing collective bargaining. Labor relations law reform. Case studies from labor relations law.

MGMT 3162. Labor Management Relations II. (SS; 2.0 cr.; prereq 3161 or #; spring, offered periodically)
Issues in labor-management negotiation, grievances, wages and economic security plans, public policies toward collective bargaining. Case studies from labor arbitration.

MGMT 3171. Leadership in Organizations. (SS; 2.0 cr.; prereq Stat 1601 or Stat 2601 or #; fall, every year)
Leadership is the ability to influence a group of people towards a goal. Examination of leadership qualities and theories as they apply to leading an organization. Ethics, social responsibility, team work, motivation, and conflict resolution skills from the perspective of a leader. International and culturally diverse aspects of leadership and leadership development. Students have the opportunity to practice leadership skills during the course.

MGMT 3201. Marketing Principles and Strategy. (SS; 4.0 cr.; prereq 2102, Stat 1601 or #; spring, offered periodically)
Basic factors affecting policy and strategy issues in marketing. Economic, legal, behavioral, environmental, competitive, and technological factors as they affect product, pricing, promotion, and marketing-channel decisions.

MGMT 3221. Management and Organization Theory. (SS; 4.0 cr.; prereq 2101, Econ 1111 or #; fall, spring, offered periodically)

MGMT 3351. Globalization: Examining India's Social and Economic Development. (IP; 4.0 cr.; *ECON 3351; prereq Econ 1111 or Econ 1112 or #; spring, offered periodically) Same as Econ 3351. Observe and study the impact of globalization on the Indian economy. Examine the growing class divide between the middle and upper middle class and the lower class. Study the problem of mass poverty in India and its various ramifications such as child labor, lack of education and basic health care, and the inherent gender bias. Examine sustainable grass roots efforts to combat some of these problems.

MGMT 3352. Emerging Markets in Asia. (IP; 4.0 cr.; prereq Econ 1111, Econ 1112, Stat 1601 or Stat 2601 or #; fall, every year)
An overview of the largest and fastest-growing markets in the world, the Asian markets. Examines topics such as business strategy and organization, marketing strategies, and business-State relations in Asia. Theory is balanced with practice by including comparative studies and business case studies.

MGMT 3501. Applied Deterministic Modeling for Management Science. (2.0 cr.; *[MATH 3501]; prereq 2102, Math 1101 or Stat 1601 or Stat 2601 or #; spring, every year)
Same as Math 3501. Formulations of real-world problems as Linear Programming or Integer Linear Programming models; graphical solutions of some LP-models. Linear Programming: the Simplex method, intuitive ideas behind the method. Using software to solve LP problems; interpreting optimal solutions; sensitivity analysis; duality. Network diagram representation; critical path method (CPM-PERT); transportation problem.

MGMT 3502. Applied Probabilistic Modeling for Management Science. (2.0 cr.; *[MATH 3502]; prereq 2102, Math 1101 or Stat 1601 or Stat 2601 or #; spring, every year)
Same as Math 3502. Short review of probability and statistics; mean and variance of a data set; discrete and continuous random variables (especially the exponential distribution and the Poisson distribution). Decision and game theory. Decision trees, types of decision criteria. Queueing models, birth-and-death processes; Markovian or Poisson arrivals and exponential service times; M/M/k and M/M/8 queues; Statistical Quality Control; inventory control system.

MGMT 3503. Consumer Behavior. (SS; 4.0 cr.; *[PSY 3503]; prereq Stat 1601 or Stat 2601 or #; spring, every year)
Same as Psy 3503. Psychological basis for understanding consumers. Some of the topics include consumer behavior, consumer cognitive processes, and consumer judgments and decisions.

MGMT 3513. Negotiation. (4.0 cr.; *[PSY 3513]; prereq 3221 or Psy 3501 or Psy/Mgmt 3701; spring, offered periodically)
Same as Psy 3513. Examines the theoretical and applied aspects of negotiation. Topics include negotiation theory, strategy, skills and tactics, communication processes, global negotiation, and ethics. Use of negotiation simulations.

MGMT 3601. Transnational Enterprise. (IP; 4.0 cr.; prereq 2101, Econ 1111, Econ 1112 or #; spring, every year)
Development and transformation of business enterprise within the global economy emerging from time and space, mergers, "corporate revolution," Fordism through to multi-plant manufacturing beyond national boundaries. Includes the basic impact of structural, institutional, and organizational changes upon the dynamics of the firm and industry in the contemporary hyper-competitive, technology-driven, fast-paced, global environment.

MGMT 3701. Organizational Behavior. (SS; 4.0 cr.; *[PSY 3701]; prereq Stat 1601 or Stat 2601, jr or sr; fall, spring, offered periodically) Same as Psy 3701. Uses the theories and research of the behavioral sciences to understand how organizations function at the individual, group, and organizational levels. Topics include stress in the workplace; group dynamics; power, leadership, and attribution theory.

MGMT 3703. Health Care Markets and Institutions. (4.0 cr.; prereq 2101, Econ 1111, Stat 1601 or Stat 2601, or #; spring, offered periodically)
The institutional details and market structures of the health care industry are studied through the lens of economic analysis, providing a context for managerial decision making. Topics include the roles of patients, physicians, and hospitals (both for-profit and non-profit), the effect of insurance on the supply and demand for health care, and the role of the pharmaceutical industry. Market imperfections and government regulatory intervention are discussed.

MGMT 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus, learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MGMT 4101. Investment and Portfolio Analysis. (4.0 cr.; prereq 2101, 2102, 3101; spring, every year)
The institutional environment of investment, techniques used to price financial products, and how to design a portfolio of many assets.

MGMT 4201. The Economics of Corporate Strategy I. (2.0 cr.; prereq 3123 or Econ 3201, Math 1021 or Math 1101, or #; fall, spring, offered periodically)
Examines the institutional environment, policies, and cost structures for the firm. The different types of competition associated with distinct market structures.

MGMT 4202. The Economics of Corporate Strategy II. (2.0 cr.; prereq 4201; fall, spring, offered periodically)
Tools for analyzing business strategies: credible strategic commitments, pricing strategies, entry and exit, Porter's five forces framework, and the relationship between value creation and strategic market positioning.

MGMT 4501. Globalization and Business Strategy. (2.0 cr.; prereq 3601 or #; fall, spring, offered periodically)
Review of the impact of increasing globalization of the corporate and economic environment;
application of strategic methods to new business conditions.

MGMT 4502. Technological Change, Labor Market, and Skill Formation. (2.0 cr.; prereq 3601 or #; fall, spring, offered periodically) The change of technology in relation to the formation of skills and transformation of regional labor markets throughout the world. The intimate relationship between "skilling" and "deskilling" of labor and the transformation of technology.

MGMT 4505. International Managerial Finance. (2.0 cr.; prereq 3101 or #; spring, offered periodically) An introduction to the international dimensions of corporate financing, investment, and risk management decisions. Foreign exchange markets, international financial systems, foreign exchange rate determination, measuring/managing currency risk, multinational capital budgeting, cost of capital in emerging economies, international taxation policies, and transfer pricing.

MGMT 4601. Advanced Topics in Financial Economics. (2.0 cr.; prereq 3101 or #; fall, spring, offered periodically) Continuation of Mgmt 3101. Topics include dividend policy, hybrid financing, derivatives, and mergers.

MGMT 4602. Long-Term Financing. (2.0 cr.; prereq 3101 or #; fall, offered periodically) Application of the fundamental financial theories acquired in Mgmt 3101 to long-term financing in corporations. The primary focus is on issuing securities to the public, financial leverage, capital structure policy, dividend policy, and leasing.

MGMT 4603. Working Capital Management. (2.0 cr.; prereq 3101 or #; fall, offered periodically) Application of the fundamental financial theories acquired in Mgmt 3101 to working capital management in corporations. The primary focus is on financial planning, cash management, credit management, and risk management.

MATH 1014. Intensive Pre-Calculus. (M/SR; 4.0 cr.; prereq 2 yrs high school math; fall, spring, every year) A short course for students in social sciences, biological sciences, and other areas requiring a minimal amount of calculus. Topics include basic concepts of functions, derivatives and integrals, exponential and logarithmic functions, maxima and minima, partial derivatives; applications.

MATH 1016. Calculus I. (M/SR; 5.0 cr.; prereq 1012; placed in 1013 or placement; fall, spring, every year) Limits and continuity; the concepts, properties, and some techniques of differentiation, antidifferentiation, and definite integration and their connection by the Fundamental Theorem. Partial differentiation. Some applications. Students learn the basics of a computer algebra system.

MATH 1017. Calculus II. (M/SR; 5.0 cr.; prereq 1101; fall, spring, every year) Techniques of integration. Further applications involving mathematical modeling and solution of simple differential equations. Taylor's Theorem. Limits of sequences. Use and theory of convergence of power series. Students use a computer algebra system.

MATH 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.
MATH 2211. History of Mathematics. (4.0 cr.; prereq 1101 or higher or #; fall, even years) Historical development of various areas in mathematics and important figures in mathematics from ancient to modern times.

MATH 2212. Introduction to Knot Theory. (M/SR; 4.0 cr.; prereq 1101 or higher or #; fall, offered periodically) Introduction to the mathematical study of knots. Presentation, tabulation, and invariants of knots. Additional selected topics from low-dimensional topology.

MATH 2401. Differential Equations. (M/SR; 4.0 cr.; prereq 1102 or #; fall, every year) First-order and second-order differential equations with methods of solution and applications, Laplace transforms, systems of equations, series solutions, existence and uniqueness theorems, the qualitative theory of differential equations.

MATH 2501. Probability and Stochastic Processes. (M/SR; 4.0 cr.; =STAT 2501; prereq 1101 or #; fall, every year) Same as Stat 2501. Probability theory; set theory, axiomatic foundations, conditional probability and independence, Bayes’ rule, random variables. Transformations and expectations; expected values, moments, and moment-generating functions. Common families of distributions; discrete and continuous distributions. Multiple random variables; joint and marginal distributions, conditional distributions and independence, covariance and correlation, multivariate distributions. Properties of random sample and central limit theorem. Markov chains, Poisson processes, birth and death processes, and queuing theory.

MATH 2993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MATH 3211. Geometry. (M/SR; 4.0 cr.; prereq 1102 or higher or #; fall, odd years) Synthetic approach to Euclidean and non-Euclidean geometries. Selected topics from affine, hyperbolic, spherical, projective geometries. Possible comparisons of analytic and synthetic approaches. May include other related topics or use of computer software for geometry.

MATH 3221. Real Analysis I. (4.0 cr.; prereq 1102, 2202 or #; fall, every year) Introduction to real analysis. The main topics of single-variable calculus-convergence, continuity, differentiation, and series as they are applied and extended in advanced settings with emphasis on precise statements and rigorous proofs. Structure of the real numbers, open and closed sets, integration, metric spaces, and other topics and applications as time allows.

MATH 3231. Abstract Algebra I. (4.0 cr.; prereq 2111, 2202 or #; spring, every year) Systematic study of groups and rings, making use of linear algebra. Groups as codifying symmetry throughout mathematics and its applications. The Euclidean algorithm and its consequences, both for integers and polynomials. Other selected topics and applications.

MATH 3401. Operations Research. (4.0 cr.; prereq 1101 or higher or #; spring, every year) Topics include, but not limited to, linear and integer linear programming formulations, sensitivity analysis and duality, network models and applications.

MATH 3411. Discrete and Combinatorial Mathematics. (4.0 cr.; prereq 1102 or higher or #; fall, every year) Propositional logic; equivalence relations; recurrence equations; structures and properties of undirected and directed graphs; applications of the aforementioned topics.

MATH 3501. Applied Deterministic Modeling for Management Science. (2.0 cr.; =MGMT 3501; prereq 1101 or Stat 1601 or Stat 2601 or Stat 2611, Mgmt 2102 or #; spring, every year) Same as Mgmt 3501. Formulations of real-world problems as Linear Programming or Integer Linear Programming models; graphical solutions of some LP models. Linear Programming: the Simplex method, intuitive ideas behind the Simplex method. Using software to solve LP problems; interpreting optimal solutions; sensitivity analysis; duality. Network diagram representation; critical path method (CPM-PERT); transportation problem.

MATH 3502. Applied Probabilistic Modeling for Management Science. (2.0 cr.; =MGMT 3502; prereq 1101 or Stat 1601 or Stat 2601 or Stat 2611, Mgmt 2102 or #; spring, every year) Same as Mgmt 3502. Short review of probability and statistics; mean and variance of a data set; discrete and continuous random variables (especially the exponential distribution and the Poisson distribution). Decision and game theory, Decision trees, types of decision criteria. Queuing models, birth-and-death processes; Markovian or Poisson arrivals and exponential service times; M/M/k and M/M/8 queues; Statistical Quality Control; inventory control system.

MATH 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MATH 4201. Complex Analysis. (2.0 cr.; prereq 3221 or #; fall, spring, offered periodically) Differentiable and analytic functions of a complex variable. Conformal integral theorems. Laurent expansions. Other topics optional.

MATH 4211. Real Analysis II. (2.0 cr.; prereq 3221 or #; fall, spring, offered periodically) Differentiation of functions of several variables. The extension of integration to other forms of integrals. Introduction to measure theory. Other optional topics.

MATH 4221. Topology. (2.0 cr.; prereq 2202 or #; fall, spring, offered periodically) Selected topics from point set topology and/or algebraic topology.

MATH 4231. Abstract Algebra II. (2.0 cr.; prereq 3231 or #; fall, spring, offered periodically) Selected topics from the theory of finite groups, Galois theory of fields, and/or the theory of rings.

MATH 4241. Number Theory. (2.0 cr.; prereq 2202 or #; fall, spring, offered periodically) Selected topics from modular congruences, theory of primes, classical Diophantine equations, and the connections with algebraic curves.


MATH 4253. Combinatorics. (2.0 cr.; prereq #; fall, spring, offered periodically) Selected topics from graph theory, the theory of ordered sets, and/or enumerative combinatorics.

MATH 4401. Numerical Methods with Applications in Mathematical Modeling. (4.0 cr.; =STAT 3501; prereq 2111, 2401 or #; fall, spring, offered periodically) Finite differences; interpolation; numerical integration; numerical solutions of differential, algebraic, and transcendental equations; continuous mathematical models.

MATH 4452. Mathematical Modeling. (4.0 cr.; prereq #; fall, spring, offered periodically) Mathematical topics include, but are not limited to, differential and difference equations, discrete and continuous dynamical systems, predator-prey models, discrete and continuous optimization models, probabilistic models, stochastic and Poisson processes, and queuing models. Applications are drawn from different areas in the sciences and social sciences.

MATH 4901. Senior Seminar. (2.0 cr.; A-F only; prereq sr math major or #; full year course begins fall sem; fall, every year) This is a full-year course, required for all mathematics majors in their senior year. Students must attend year round and present one of the seminars.

MATH 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MUS 1000. Concert Attendance. (0.5 cr.; max 3.5 cr.; S-N only; prereq major or minor; fall, spring, every year) To be taken by all music majors and minors; involves attending a set number of music performance offerings during the semester, as a participant, audience member, and usher or stage manager.

Music (MUS) Division of Humanities
MUS 1041. Introduction to Music. (FA; 4.0 cr.; fall, every year)
Survey emphasizing development of an intelligent understanding and appreciation of music. For non-music majors.

MUS 1042. Fundamentals of Music. (FA; 4.0 cr.; spring, odd years)
The rudiments of music including note and rhythmic reading, scales, chords, beginning chord progressions, and practical keyboard work in the piano lab.

MUS 1043. American Jazz Styles. (FA; 4.0 cr.; fall, spring, offered periodically)
Development and analysis of the New Orleans dixieland, ragtime, stride, boogie-woogie, Chicago dixieland, swing, bop, cool, funky, progressive, third-stream, free form, and fusion jazz styles. Introductory course to help non-music majors become familiar with and appreciate this art form.

MUS 1044. Class Piano for the Non-Music Major. (ART/P; 1.0 cr.; fall, spring, every year)
Introduction to piano performance for students with no previous piano training. Students learn basic keyboard skills including note reading, fingerings, and counting. Study beginning piano technique and learn to perform elementary-level solos and ensembles. [Note: special fee required]

MUS 1045. Class Guitar. (ART/P; 1.0 cr.; fall, spring, every year)
Introduction to guitar performance for students with no previous guitar experience. Students learn basic guitar skills, study beginning guitar technique, and learn to perform music. This class is not for students who have played guitar before. [Note: special fee required]

MUS 1049. Introduction to American Popular Music. (HUM; 4.0 cr.; [MUS 1801]; spring, even years)
Survey of popular musical styles in America from the early 20th century to today.

MUS 1050. Accompanying. (ART/P; 1.0 cr.; [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
Students who accompany private lessons and recitalists may receive credit. Accompanying assignments are made through consultation with the piano faculty.

MUS 1061. Introduction to World Music. (IP; 4.0 cr.; fall, every year)
Survey of primarily non-Western music cultures, emphasizing the development of an appreciation for the music and an understanding of its significance in its culture of origin. For non-music majors.

MUS 1070. Instrumental Chamber Ensemble. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
Performance of instrumental chamber music. Groups are formed according to the interests of students and availability of materials.

MUS 1080. Jazz Combo. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
Performance of instrumental jazz music with emphasis on improvisation.

MUS 1081. Jazz Improvisation. (ART/P; 2.0 cr.; prereq #; spring, offered periodically)
Introduction to the art of jazz improvisation for instrumentalists and vocalists. Topics, including practice techniques, jazz theory, jazz harmony, and improvisational techniques, are discussed through solo analysis, transcriptions, listening assignments, live performances, and instructor demonstration.

MUS 1090. Vocal Chamber Ensemble. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
Performance of vocal ensemble music especially written for smaller groups.

MUS 1101. Core Studies I: Music Theory I. (M/SE; 4.0 cr.; prereq major or minor or #, concurrent enrollment in piano class/lessons until piano proficiency is passed for majors and minors; fall, every year)
First course in a series of four. Scales, modes, and keys; simple and complex meters; basic triads, seventh chords, and harmonic techniques; initial analysis of scores; and introduction to two- and four-part writing. Introduction to sight-singing, rhythmic and melodic dictation, and aural error detection. Must have adequate skills in grand staff music reading at the start of the course.

MUS 1102. Core Studies I: Music Theory II. (M/SE; 4.0 cr.; prereq 1101, major or minor or #, concurrent enrollment in piano class/lessons until piano proficiency is passed for majors and minors; spring, every year)
Harmonic structure, progression and tonicization, seventh chords, secondary dominants and sevenths, analysis of scores. Sight-singing with chromatic pitches; melodic, rhythmic, and harmonic dictation.

MUS 1111. Functional Keyboard for the Music Major I. (ART/P; 1.0 cr.; prereq coreq 1101; #; fall, every year)
Beginning instruction for music majors and minors whose principal performing medium is voice or non-keyboard instrument; skill development in sight reading, technique, harmonization, simple literature. [Note: special fee required]

MUS 1112. Functional Keyboard for the Music Major II. (ART/P; 1.0 cr.; prereq 1111, coreq 1102; #; spring, every year)
Continued beginning instruction begun in Mus 1111 for music majors and minors whose principal performing medium is voice or non-keyboard instrument; includes sight reading, technique, harmonization, transposition, improvisation, simple literature. [Note: special fee required]

MUS 1200. Individual Performance Studies: Piano. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in piano is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1201. Individual Performance Studies: Piano Accompanying. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in piano accompanying is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1202. Individual Performance Study: Organ. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in organ is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1203. Individual Performance Study: Harpsichord. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in harpsichord is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1204. Individual Performance Study: Voice. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in voice is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1205. Individual Performance Study: Violin. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in violin is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam
should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1206. Individual Performance Study: Viola. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in viola is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1207. Individual Performance Study: Cello. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in cello is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1208. Individual Performance Study: Double Bass. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in double bass is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1209. Individual Performance Study: Flute. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in flute is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1210. Individual Performance Study: Oboe. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in oboe is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1211. Individual Performance Study: Clarinet. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in clarinet is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1212. Individual Performance Study: Saxophone. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in saxophone is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1213. Individual Performance Study: Bassoon. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in bassoon is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1214. Individual Performance Study: Trumpet. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in trumpet is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1215. Individual Performance Study: French Horn. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in french horn is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1216. Individual Performance Study: Trombone. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in trombone is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1217. Individual Performance Study: Euphonium. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in euphonium is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1218. Individual Performance Study: Tuba. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in tuba is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1219. Individual Performance Study: Percussion. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in percussion is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1221. Individual Performance Study: Guitar. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in guitar is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]
should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1222. Individual Performance Study: Electric Bass. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in electric bass is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1223. Individual Performance Studies: Composition. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #; fall, spring, every year)
Private instruction in composition is open to all students. It is recommended that music majors fulfill their requirement of 7 credits in successive enrollments in order to maintain continuous emphasis in the major performance area. All music majors and other students who anticipate applying for the jury exam should enroll under the A-F grading only. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 1300. UMM Symphonic Winds. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
A select ensemble of wood, brass, percussion, double bass, and piano instrumentation which performs traditional and contemporary literature of the highest quality. A program fee is attached to this course in fall semester only to cover the expenses of the annual off-campus weekend retreat. [Note: special fee required for fall semester]

MUS 1301. Chamber Winds. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
A select group that promotes the advancement of wind music of artistic and historical significance through one-on-a-part performances in a directed chamber setting.

MUS 1310. University Choir. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
Preparation of choral works for at least one public concert each semester and other special events. Emphasis on basic choral singing techniques.

MUS 1320. Concert Choir. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
Preparation of choral works from all major periods of music literature with emphasis on concert performance. Several public concerts and appearances scheduled each semester in addition to a spring concert tour.

MUS 1321. Chamber Singers. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year)
A select ensemble of vocalists performing repertoire in a variety of styles. Several public concerts and appearances scheduled each semester.

MUS 1330. Jazz Ensemble. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
Rehearsals and concerts cover the literature for this medium.

MUS 1331. Brass Ensemble. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
A small directed ensemble for brass (and occasionally percussion) players, performing standard brass literature in various styles and from all historical periods.

MUS 1340. Orchestra. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
The study and preparation of standard orchestral works for performance at several public concerts and appearances each semester in addition to a concert tour. The study of basic orchestral procedure.

MUS 1360. Concert Choir Tour. (0.5 cr. [max 2.0 cr.]; S-N only; prereq coreq 1320, #; spring, every year)
Participation in the spring concert tours undertaken by the UMM Concert Choir. [Note: a program fee is attached to this course to cover the expenses of the concert tour]

MUS 1370. Chamber Orchestra. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; fall, spring, every year)
The study and preparation of standard string orchestral works for performance at several public concerts and appearances each semester. Wind and percussion players need special permission to enroll. The study of basic orchestral procedure.

MUS 1401. English, Italian, German, and French Diction for Singers. (ART/P; 1.0 cr.; A-F or Audit; spring, every year)
The sounds and symbols of the International Phonetic Alphabet, rules for correct English, Italian, German, and French lyric diction. Transactions of German Lieder, French Melodie, Italian Arias, and English Songs into International Phonetic Alphabet. German, French, Italian, and English songs performed in class for critique.

MUS 1411. Vocal Performance Workshop. (ART/P; 1.0 cr.; prereq #; spring, offered periodically)
Practical introduction to vocal performance. Students become familiar with a number of operas and musical comedies and perform selections emphasizing ensemble work.

MUS 1801. Introduction to American Popular Music. (IC; 4.0 cr.; [MUS 1049]; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
Survey of popular musical styles in America from the early 20th century to today. An emphasis on classroom discussion and activities, and written assignments designed to encourage critical analysis of American popular music and its social contexts.

MUS 2045. Intermediate Class Guitar. (ART/P; 1.0 cr.; prereq 1045 or #; fall, spring, every year)
Focusing on the middle ground where popular and classical guitar meet, reading skills, bar and "color" chords, and advanced right hand technique are applied to both popular and classical music. Students write and perform original songs, learn personal favorites, and advance through carefully selected classical etudes. [Note: special fee required]

MUS 2101. Core Studies II: Music Theory III. (FA; 4.0 cr.; prereq 1102, major or minor or #, concurrent enrollment in piano class/lessons until piano proficiency is passed for majors and minors; fall, every year)
Modulatory techniques; chromatic harmony of the Classical and Romantic Periods; borrowed chords, Neapolitan and augmented sixths; ninth, eleventh, and thirteenth chords; altered dominants and chromatic mediant; harmonic and formal analysis of scores including binary, ternary, variation, sonata, and rondo forms.

MUS 2102. Core Studies II: Music Theory IV. (FA; 4.0 cr.; prereq 2101, major or minor or #, concurrent enrollment in piano class/lessons until piano proficiency is passed for majors and minors; spring, every year)
Model, pentatonic, whole-tone, and octatonic collections; analysis of scores including nonfunctional harmony; pitch class set, twelve-tone and other 20th- and 21st-century techniques.

MUS 2111. Functional Keyboard for the Music Major III. (ART/P; 1.0 cr.; prereq 1112, coreq 2101, #; fall, every year)
Elementary to early intermediate instruction for music majors and minors whose principal performing medium is voice or non-keyboard instrument; continued skill development begun in MUS 1112; introduction of easy solo and ensemble literature. [Note: special fee required]

MUS 2112. Functional Keyboard for the Music Major IV. (ART/P; 1.0 cr.; prereq 2111, coreq 2102, #; spring, every year)
Intermediate instruction for music majors and minors whose principal performing medium is voice or non-keyboard instrument; continued skill development begun in MUS 2111; introduction of intermediate solo and ensemble literature. [Note: special fee required]

MUS 2301. Instrumental Techniques--Woodwind. (1.0 cr.; prereq major or minor or #; fall, offered periodically)
Practical study to develop elementary skills as well as a basic teaching knowledge and understanding of performance problems of the woodwind instruments.

MUS 2302. Instrumental Techniques--Brass. (1.0 cr.; prereq major or minor or #; spring, offered periodically)
Practical study to develop elementary skills as well as a basic teaching knowledge and understanding of performance problems of the brass instruments.

MUS 2303. Instrumental Techniques--Strings. (1.0 cr.; prereq major or minor or #; fall, offered periodically)
Practical study to develop elementary skills as well as a basic teaching knowledge and understanding of performance problems of the string instruments.
MUS 3204. Vocal Techniques. (1.0 cr.; prereq major or minor or #: spring, odd years) Practical study to develop elementary skills as well as a basic teaching knowledge and understanding of performance problems of the voice.

MUS 3205. Instrumental Techniques--Perception. (1.0 cr.; prereq major or minor or #: spring, offered periodically) Practical study to develop elementary skills as well as a basic teaching knowledge and understanding of performance problems of the percussion instruments.

MUS 3051. Piano Pedagogy I. (ART/P; 2.0 cr.; prereq 1200 or #: fall, even years) This course is a study, demonstration, and discussion about the various elements of piano teaching methods, techniques, and materials for elementary and early intermediate levels. This includes analysis of various piano courses and piano literature, discussion of technical regimes, ideas for private and group lessons, and planning for the practical business aspect of teaching. Recommended for piano majors.

MUS 3052. Piano Pedagogy II. (ART/P; 2.0 cr.; prereq 1200 or #: fall, odd years) This course covers much intermediate literature from each of the four major periods of music with practical ideas to put into immediate use by current teachers. Piano literature to motivate and retain students as well as the study of performance practices as they relate to each musical style are emphasized.

MUS 3061. Guitar Pedagogy. (ART/P; 2.0 cr.; prereq 1221 or #: fall, spring, every year) Discussions and readings on guitar pedagogy, private and group lessons, instructing young students, practice methods and business issues associated with self-employment in teaching music. Instruction of beginners in a one-on-one situation and classroom presentation of lessons.

MUS 3101. Core Studies III: Medieval, Renaissance, and Baroque Music. (HIST; 4.0 cr.; prereq 1102, major or minor or #: fall, odd years) Historical development of Western music and representative literature of the various periods and styles.

MUS 3102. Core Studies III: Classical, Romantic, and 20th-Century Music. (FA; 4.0 cr.; prereq 1102, major or minor or #: spring, odd years) Historical development of Western music and representative literature of the various periods and styles.

MUS 3200. Advanced Individual Performance Study: Piano. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in piano for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3201. Advanced Individual Performance Study: Piano Accompanying. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in piano accompanying for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3202. Advanced Individual Performance Study: Organ. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in organ for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3203. Advanced Individual Performance Study: Harpsichord. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in harpsichord for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for unexcused absences from scheduled lessons. [Note: special fee required]

MUS 3204. Advanced Individual Performance Study: Voice. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in voice for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3205. Advanced Individual Performance Study: Violin. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in violin for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3206. Advanced Individual Performance Study: Viola. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in viola for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3207. Advanced Individual Performance Study: Cello. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in cello for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3208. Advanced Individual Performance Study: Double Bass. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in double bass for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3209. Advanced Individual Performance Study: Flute. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in flute for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3210. Advanced Individual Performance Study: Oboe. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in oboe for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3211. Advanced Individual Performance Study: Clarinet. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in clarinet for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3212. Advanced Individual Performance Study: Saxophone. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in saxophone for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3213. Advanced Individual Performance Study: Bassoon. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in bassoon for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3214. Advanced Individual Performance Study: Trumpet. (ART/P; 1.0 cr. [max 8.0 cr.]; prereq #: fall, spring, every year) Private instruction in trumpet for music students at an advanced level of performance. A
jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3215. Advanced Individual Performance Study: French Horn. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in French horn for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3216. Advanced Individual Performance Study: Trombone. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in trombone for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3217. Advanced Individual Performance Study: Euphonium. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in euphonium for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3218. Advanced Individual Performance Study: Tuba. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in tuba for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3219. Advanced Individual Performance Study: Percussion. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in percussion for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3221. Advanced Individual Performance Study: Guitar. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in guitar for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3222. Advanced Individual Performance Study: Electric Bass. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in electric bass for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3223. Advanced Individual Performance Studies: Composition. (ART/P; 1.0 cr. [max 8.0 cr.; prereq #: fall, spring, every year])
Private instruction in composition for music students at an advanced level of performance. A jury examination is required for advanced performance study. Note: Applied music instructors are not expected to make up sessions for absences from scheduled lessons. [Note: special fee required]

MUS 3311. Conducting Techniques. (2.0 cr.; prereq major or minor or #: fall, every year)
Development of basic ensemble conducting skills.

MUS 3321. Instrumental Conducting and Materials. (2.0 cr.; prereq 3311, major or minor or #: spring, every year)
Specialization of instrumental conducting and a survey of ensemble materials for various levels of ability and maturity.

MUS 3331. Choral Conducting and Materials. (2.0 cr.; prereq 3311, major or minor or #: spring, every year)
Specialization of choral conducting and a survey of ensemble materials for various levels of ability and maturity.

MUS 3335. Music Arranging and Orchestration. (2.0 cr.; A-F only; = [MUS 3351, MUS 3352]; prereq 1102 or #: fall, every year)
Exploration of the theoretical process of transcribing and scoring music for different combinations of instruments and voices. Topics include vocal ranges and instrumental transposition. Arranging projects are assigned throughout the semester to develop practical skills.

MUS 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

MUS 4101. Seminar: Topics in Music History. (4.0 cr.; prereq 1102, major or minor or #: spring, odd years)
A small, discussion-oriented seminar emphasizing a multi-faceted approach to an advanced musical topic. Topics vary each semester the course is offered and are determined by the instructor. Student work culminates in a semester-long research project and presentation.

MUS 4103. Seminar: Advanced Music Theory and Analysis. (4.0 cr.; [max 8.0 cr.]; prereq 2102, major or minor or #: fall, odd years)
A discussion-oriented seminar on an advanced aspect or aspects of music theory and analysis. Repertoire and techniques vary each semester the course is offered and are determined by the instructor. Student work culminates in a semester-long research project and presentation.

MUS 4901. Senior Project and Portfolio. (1.0 cr.: S-N only; prereq major, #: fall, spring, every year)
Culminating activity that allows a graduating student to demonstrate competence as a musician. Projects may take the form of a solo recital, lecture-recital, research paper, chamber music recital, or other major study. Project should be determined in the student's junior year and approved by the music faculty. Majors taking Mus 3200 through 3223 normally satisfy this requirement with a senior recital.

MUSE Education Methods (MUSE)
Division of Education

MUSE 4123. Methods of Teaching Music K-12. (4.0 cr.; A-F only; prereq admission to the secondary teacher education program, coreq SeEd 4102, SeEd 4103, SeEd 4104, SeEd 4105; fall, every year)
Objectives, curricula, special methods, materials, and evaluation appropriate for teaching music in K-12.

Philosophy (PHIL)
Division of Humanities

PHIL 1004. Introduction to Western Philosophy. (1.0 cr.; fall, spring, every year)
What is the good life for human beings? What happens after we die? What is the relation between our minds and bodies? Does God exist? In this course, we will examine classic works in philosophy that address these big questions. Authors include: Plato, Aristotle, Epictetus, and Lucretius.

PHIL 1101. Introduction to Philosophy. (HUM; 4.0 cr.; = [PHIL 1801]; fall, spring, offered periodically)
An introduction to fundamental philosophical problems in areas such as metaphysics (what exists?), epistemology (what can we know? and how can we know it?), and ethics (what actions are moral and immoral? and what is the good life?), with an emphasis on developing the reading, writing, and analytical skills required for philosophical investigation.
PHIL 1801. THINK: An Introduction to Philosophy.  (IC; 4.0 cr.; =PHIL 1101; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
A course designed to build basic critical thinking skills. Answer questions like: What makes a method of inquiry rational? What, if anything, distinguishes "scientific reasoning" from other sorts of reasoning? More generally, what distinguishes good from bad reasoning? What is truth--is it relative?

PHIL 1802. Philosophy and Pop Culture.  (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
An introduction to traditional issues in philosophy through the lens of characters presented in various pop cultural media.

PHIL 1803. How To Think About Weird Things.  (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHIL 2101. Introduction to Symbolic Logic.  (M/SR; 4.0 cr.; fall, every year)
An introduction to formal or deductive logic, including basic concepts of logical argumentation; Aristotelian logic; and symbolic translations, truth tables, and theory of deduction. Samples from political speeches, philosophical essays as well as original LSAT questions are analyzed.

PHIL 2111. Introductory Ethics.  (HUM; 4.0 cr.; spring, every year)
An introduction to philosophical accounts of what makes right acts right and wrong acts wrong, issues involving the concept of goodness, and arguments or debates about moral responsibility.

PHIL 2112. Professional Ethics.  (E/CR; 4.0 cr.; fall, every year)
A critical examination of moral issues that arise in a person's professional life. Possible topics include affirmative action, autonomy in the workplace, ethical issues in advertising, corporate responsibility, coercive wage offers, distributive justice, and sexual harassment. Issues concerning race, gender, and women are included in selected modules.

PHIL 2113. International and Biomedical Ethics.  (HUM; 4.0 cr.; spring, offered periodically)
A general survey of topics in international and biomedical ethics. Topics may include: nuclear deterrence, humanitarian intervention, just war theory, famine relief, global justice, abortion, euthanasia, doctor-patient relationships, clinical trials, animal experimentation, and genetic engineering.

PHIL 2114. Environmental Ethics.  (ENVT; 4.0 cr.; spring, odd years)
Survey of fundamental theoretical debates in environmental ethics. General moral approaches are canvassed, as are the major positions in environmental ethics: anthropocentrism, sentientism, biocentric individualism, holism. Specific topics include: speciesism, the environmental-animals liberation debate, and the predation problem.

PHIL 2121. Philosophy of Religion.  (HUM; 4.0 cr.; spring, offered periodically)
A selection of main philosophical issues concerning religion such as the notion of a divinity, the attempts to prove or refute the existence of a divine being, the relationship between faith and reason, the link between religion and morality, the knowledge of a divinity.

PHIL 2141. Analytic Feminism.  (HUM; 4.0 cr.; spring, offered periodically)
Applies an analytical approach to issues discussed in feminist writings. A mixture of lecture and discussion. Requirements include essay exams, papers, attendance, service-learning projects with related reflective journals, and class participation.

PHIL 2151. Philosophy of Mind.  (HUM; 4.0 cr.; fall, spring, offered periodically)
An introduction to several problems in the philosophy of mind, such as the mind/body problem, consciousness, and psychological explanation.

PHIL 2161. Philosophy and Film.  (HUM; 4.0 cr.; spring, every year)
Addresses some traditional aesthetic questions about the status of film as well as examining film to be a form of philosophy. Also, the role of film as a form of critical philosophy is discussed.

PHIL 2162. Ethics of Love and Sex.  (HUM; 4.0 cr.; summer, offered periodically)
Survey of fundamental theoretical debates about the ethics of love and sex. Topics include: competing accounts of erotic love, the moral status of various sexual and romantic orientations, pornography, consensual incest, prostitution and sex tourism, BDSM/kink, and mediated sex (sex tapes, under age sexting, and tell-all memoirs).

PHIL 2993. Directed Study.  (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHIL 3101. Metaphysics.  (HUM; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; spring, odd years)
Explores fundamental metaphysical issues such as the nature of reality, the notion of personal identity, the relationship between language, thought, minds, and the world. Philosophical works of both classic and contemporary philosophers such as Plato, Aristotle, Quine, Putnam, and Kripke are discussed.

PHIL 3112. Free Will.  (HUM; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; spring, offered periodically)
Explores ancient and contemporary debates surrounding the nature of free will, its plausibility given prevailing theories of physics and mind, and its value. Possible topics include the relevance of free will to autonomy, moral responsibility, and living meaningfully.

PHIL 3121. Political Philosophy.  (SS; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; fall, even years)
Explores fundamental issues in political philosophy (e.g., political authority; distributive justice; nature, origin, and justification of the state; natural and civil rights) by, among other things, an examination of the works of philosophers such as Plato, Hobbes, Mill, and Rawls.

PHIL 3131. Philosophy of Law.  (SS; 4.0 cr.; spring, odd years)
Critical examination of theoretical and practical normative issues in the philosophy of law, especially questions regarding the justification of punishment.

PHIL 3141. The Theory of Knowledge.  (HUM; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; fall, even years)
Explores historical and contemporary views on the limits, justification, and nature of human knowledge. Topics include experiential versus a priori knowledge, the nature of belief, skepticism, and different theories of justification.

PHIL 3151. History of Ancient Philosophy.  (HIST; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; fall, even years)
Explores the views of philosophers such as Plato, Aristotle, Epicurus, and the Stoics. Possible topics include ancient views on the nature and possibility of knowledge, the relationship of the soul to the body, and what the good life is for a human being.

PHIL 3162. The Scottish Enlightenment: Markets, Minds, and Morals.  (IP; 4.0 cr.; =HIST 3162; prereq #: summer, offered periodically)
Same as Hist 3162. Study of the philosophy and history of the Scottish Enlightenment. Focus on its original setting through analysis and discussion of primary texts and scholarly interpretations, guest lectures, and small-group discussions with recognized experts in the study of the Scottish Enlightenment. Includes visits to historically significant cities and sites.

PHIL 3171. History of Modern Philosophy.  (HIST; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; spring, odd years)
Explores views of philosophers such as Descartes, Leibniz, Berkeley, Hume, and Kant. Possible topics include the relationship of the mind to the body, and whether and how it is possible to have knowledge of the external world.
PHIL 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHIL 4000. History of Philosophy Seminar. (HIST; 4.0 cr. [max 8.0 cr.]; prereq 1101 or 2101 or 2111 or #; fall, every year)
Intensive investigation of a particular philosophical problem, area, or work of a philosopher. Topics vary.

PHIL 4002. Existentialism. (HIST; 4.0 cr.; prereq any 1xxx or 2xxx or #; fall, spring, offered periodically)
Examination of some prominent thinkers often classified as "existentialists": Kierkegaard, Dostoevsky, Nietzsche, Sartre, and Camus.

Topics include what human freedom is, what makes a life authentic (or inauthentic), what role passion and choice should play in acquiring our beliefs and values, and what difference (if any) God's existence or non-existence makes on the significance of our lives.

PHIL 4100. Moral Issues and Theories. (HUM; 4.0 cr. [max 8.0 cr.; prereq 2111 or #; fall, even years)
Intensive investigation of a particular problem, area, issue, or theory in moral philosophy.
Possible topics include moral responsibility, autonomy, weakness of will, and self-deception. Topics vary.

PHIL 4111. Ethical Theory. (HUM; 4.0 cr.; prereq 2111 or #; spring, odd years)
This course in metaethics focuses on the nature of moral obligation. Topics include: Can moral obligations change with the passage of time? Are genuine moral dilemmas possible? Does "ought" imply "can"? Is moral obligation overriding? Is there a genuine distinction between "subjective" and "objective" moral obligation?

PHIL 4121. Philosophy of Language. (HUM; 4.0 cr.; prereq 2101 or #; spring, even years)
Traditional and contemporary discussions of philosophical problems such as the nature of language, its relationships to the world, to human thought, and to truth; the nature of logical reasoning; metalinguistic problems.
Readings from philosophers such as Frege, Russell, Quine, Putnam, Goodman, Wittgenstein, and Kripke.

PHIL 4130. Contemporary Issues in Philosophy. (HUM; 4.0 cr. [max 8.0 cr.; prereq 1101 or 2101 or 2111 or #; fall, odd years)
Exposure to, and critical examination of, philosophical issues of special contemporary interest. Topics may include the nature of analytic philosophy and its relationship to other philosophical traditions such as continental or feminist philosophy, the debate on realism and anti-realism, the notion of objectivity.

PHIL 4131. Personal Identity, Proper Names, and Essences. (HUM; 4.0 cr.; prereq 1101 or 2101 or 2111 or #; fall, spring, offered periodically)
A seminar primarily devoted to the discussion of readings, i.e., Naming and Necessity by Saul Kripke and Reasons and Persons by Derek Parfit. Questions such as: How do proper names function? Are there essential features of persons or objects? What makes each of us the same particular individual over time?

PHIL 4901. Senior Philosophical Defense. (2.0 cr.; A-F only; prereq phil major; fall, spring, every year)
Writing and defending a senior philosophical thesis is the culminating experience for UMM philosophy majors. Majors develop a piece of their philosophical writing, producing multiple drafts in response to comments from a variety of philosophical viewpoints, and then orally defend their thesis.

PHIL 4902. Advanced Seminar in History of Philosophy. (HUM; 4.0 cr.; A-F only; prereq 1101 or 2101 or 2111 or sr status, #; spring, offered periodically)
Advanced seminar on selected topics in the History of Philosophy. Students read and discuss primary source material on a topic of common interest. Additionally, each student investigates a related topic in greater depth, writes a paper, and gives a public presentation.

PHIL 4903. Advanced Seminar in Metaphysics and Epistemology. (HUM; 4.0 cr.; A-F only; prereq 1101 or 2101 or 2111, sr status, #; spring, offered periodically)
Advanced seminar on selected topics in the Metaphysics and Epistemology. Students read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth, writes a paper, and gives a public presentation.

PHIL 4904. Advanced Seminar in Value Theory. (HUM; 4.0 cr.; A-F only; prereq 1101 or 2101 or 2111, sr status, #; spring, offered periodically)
Advanced seminar on selected topics in Value Theory. Students read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth, writes a paper, and gives a public presentation.

PHIL 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHYS 1005. Journal Club. (1.0 cr. [max 4.0 cr.]; S-N only; fall, every year)
Students learn about a wide variety of current topics in physics by reading and discussing recent journal articles.

PHYS 1052. The Solar System. (SCI-L; 5.0 cr.; fall, every year)
The history of astronomy; motions of celestial objects; gravity and electromagnetic radiation; the Earth and Moon; the planets and their moons; meteors and asteroids; the Sun; telescopes and other astronomical instruments.

Stars and constellations of the fall sky. Night viewing sessions required. (4 hrs lect, 2 hrs lab)[Note: no cr for students who have received cr for Phys 1051]

PHYS 1053. Introduction to Stars, Galaxies, and Cosmology. (SCI; 4.0 cr.; spring, every year)
Gravity and electromagnetic radiation; nuclear physics; stellar properties; stellar evolution; galaxies; quasars; and cosmology. Stars and constellations of the winter sky. Night viewing sessions required. (4 hrs lect)

PHYS 1063. Physics of Weather. (ENVT; 4.0 cr.; fall, even years)
Structure and dynamics of the atmosphere, global energy balance, various atmospheric phenomena from the global scale to the local scale including global wind systems, cyclones, fronts and air masses, thunderstorms, tornadoes, past and present climate, weather forecasting, problems concerning the interaction between civilization and the atmosphere. Some observation and field work required.

PHYS 1091. Principles of Physics I. (SCI-L; 5.0 cr.; prereq high school higher algebra; fall, every year)
Introduction to physics without the use of calculus. Vectors, kinematics, Newton's laws of motion, work and energy, momentum, torque, fluids, thermal laws, laws of thermodynamics, oscillations and waves. (4 hrs lect, 2 hrs lab)

PHYS 1092. Principles of Physics II. (SCI-L; 5.0 cr.; prereq 1091, spring, every year)
Coulomb's law, electric fields, electric potential, capacitance, electric current, resistance, DC circuits, magnetism, induction, reflection and refraction of light, mirrors and lenses, interference and diffraction, optical instruments, radioactivity (4 hrs lect, 2 hrs lab)

PHYS 1101. General Physics I. (SCI-L; 5.0 cr.; prereq Math 1101 or #; spring, every year)
Vectors, kinematics, laws of motion, circular motion, work-energy theorem, conservation principles, rotational motion, gravitation, simple harmonic oscillations, wave phenomena, fluid mechanics, thermal properties of matter, kinetic theory, laws of thermodynamics. (4 hrs lect and rec, 2 hrs lab)

PHYS 1102. General Physics II. (SCI-L; 5.0 cr.; prereq 1101, Math 1102 or #; fall, every year)
Coulomb's law, electric field, Gauss's law, electric potential, capacitance, dielectrics, current, resistance, circuits, magnetic field, Ampere's law, inductance, Faraday's law, AC circuits, Maxwell's equations, electromagnetic waves, nature of light, reflection, refraction, optical instruments, interference, diffraction. (4 hrs lect and rec, 2 hrs lab)

PHYS 1801. Energy Science. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically)
A scientific and quantitative look at the production and consumption of energy. Examination of the scientific foundations of
PHYS 1802. Projects in Physics and Engineering. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Possible projects include high altitude balloon flights, meteor imaging, skylight studies, cosmic ray measurements, determination of wave propagation in granular media, and analysis of radio astronomical observations. Equipment development and computerized data acquisition and analysis included. Research into the engineering and scientific background of the projects required. (1 hr lect, 2 hrs lab)

PHYS 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHYS 2101. Modern Physics. (SCI-L; 4.0 cr.; prereq 1102, Math 2401 or #; spring, every year) Special relativity, quantum nature of matter and radiation, Bohr-Sommerfeld atom, atomic spectra, uncertainty principle, Schrodinger equation, hydrogen atom, electron spin, Pauli principle, and periodic table. (3 hrs lect, 3 hrs lab)

PHYS 2201. Circuits and Electronic Devices. (SCI-L; 4.0 cr.; prereq 1102 or #; spring, every year) A hands-on practical course in electronics. Analog electronics including AC and DC circuit analysis, passive circuit elements, pn junctions, transistors, and op-amp circuits. Digital electronics including combinational logic, sequential logic, and microprocessors. (3 hrs lect, 3 hrs lab)

PHYS 2301. Atmospheric Physics. (ENV'T; 4.0 cr.; prereq 1092 or 1102, Math 1102; fall, odd years) Introduction to atmospheric physics with an emphasis on thermodynamics. Atmospheric thermodynamics including gas laws, phase transitions, laws of thermodynamics, two-component systems, atmospheric stability; radiative transfer including atmospheric optics and remote sensing; some aspects of atmospheric chemistry such as aerosols, chemical cycles, traces gases; cloud microphysics including nucleation and growth; and atmospheric dynamics including equations of motion for fluid flow; applications to weather systems. (4 hrs lect)

PHYS 2401. Optics. (SCI-L; 4.0 cr.; prereq 1102; spring, odd years) Light as a wave phenomenon, electromagnetic nature of light, Huygens' principle, interference, diffraction—Fraunhofer and Fresnel, polarization, dispersion, absorption and scattering. (4 hrs lect, lab TBA)

PHYS 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHYS 3003. Computer Modeling of Materials. (SCI; 2.0 cr.; prereq 1102; fall, even years) Focus on the description of materials as assemblies of microscopic particles, covering aspects of molecular dynamics simulations in various statistical ensembles. Skills in scientific programming, visualization and parallel programming are developed through a semester-long project in which students develop a series of molecular dynamics modules.

PHYS 3101. Classical Mechanics. (SCI; 4.0 cr.; prereq 2101, Math 2101 or #; fall, even years) Kinematics and dynamics of a particle, oscillations, central-force motion, systems of particles, rigid-body rotations, gravitation, non-inertial coordinate systems. Lagrangian and Hamiltonian formulations, dynamics of rigid bodies. (4 hrs lect)

PHYS 3151. Solid State Physics. (2.0 cr.; prereq 2101, Math 2101; fall, odd years) An introduction to crystal lattices, Bravais lattices, electronic band structure in metals and semi-metals, cohesive energy of solids, phonon structure, magnetic properties.

PHYS 3152. Particle and Nuclear Physics. (2.0 cr.; prereq 2101, Math 2101; spring, odd years) Leptons, baryons, quarks, the weak interaction, the strong interaction, the Standard Model, Feynman diagrams, nuclear stability, the shell model, decay modes, nuclear reactions.

PHYS 3153. Cosmology. (2.0 cr.; prereq 2101; spring, odd years) The geometry of the universe, cosmological models, observational parameters, the age of the universe, dark matter, the cosmic microwave background, nucleosynthesis, inflation, dark energy.

PHYS 3401. Experimental Physics. (SCI-L; 4.0 cr.; prereq 2101; fall, even years) An introduction to modern experimental methods. (3 hrs lect, 3 hrs lab)

PHYS 3501. Statistical Physics. (SCI; 4.0 cr.; prereq 2101; spring, even years) Probability distributions, statistical ensembles, statistical thermodynamics, ideal gases, quantum statistics, kinetic theory of transport phenomena. (4 hrs lect)

PHYS 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PHYS 4101. Electromagnetism. (4.0 cr.; prereq 2101, Math 2101 or #; fall, odd years) Vector calculus, electrostatics, Laplace and Poisson equations, dielectrics, magnetostatics, magnetic properties of matter, electromagnetic induction, Maxwell's equations, electrodynamics, electromagnetic waves. (4 hrs lect)

PHYS 4201. Quantum Mechanics. (4.0 cr.; prereq 2101, Math 2101; spring, every year) Uncertainty principle, Schroedinger equation, commutation relations, momentum space wave functions, Dirac notation, applications to problems in one dimension and the hydrogen atom, angular momentum. (4 hrs lect)

POL 1101. Introduction to Political Theory. (E/CR; 4.0 cr.; spring, every year) An introduction to key political concepts, questions, and ideologies through the writings of major thinkers of Western political theory and examination of contemporary debates about political life.

POL 1201. American Government and Politics. (E/CR; 4.0 cr.; fall, spring, every year) Analysis of principles, organization, procedures, and powers of government in the United States. The federal system, national constitution, civil and political rights, party system; nature, structure, powers, and procedures of legislative, executive, and judicial departments of the national government.

POL 1202. Law and Society: Introduction to Public Law. (SS; 4.0 cr.; spring, even years) Law is a significant part of modern-day society and culture, especially in the United States. Examine the adversarial system of law and the various actors and institutions that influence and shape it in this country. In particular, look at where legal authority comes from and its limits in modern society. Explore the ways in which law acts to restrict and empower individuals and groups in society. This introductory level course is intended as a survey of the concept of public law both for students interested in taking upper-level courses dealing with legal and constitutional questions and for students simply interested in a greater understanding of why and how law matters in 21st-century society. It is taught using lectures mixed with some in-class activities and simulations.

POL 1401. World Politics. (IP; 4.0 cr.; fall, every year) The contemporary international system, including nationalism, international political economy, foreign policy formulation, and global
concerns such as the environment and conflict. North/South debate, definitions of power, the new world order, regional vs. global conflicts, and avenues of cooperation.

**POL 1811. War and Terrorism.** (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) An in-depth look into war and terrorism from 1914 to the present. Why do nations go to war? Why do people resort to terrorism? How do we prevent war/terrorism and preserve peace? Grapple with these questions and by the end of the term, acquire a rich, sophisticated understanding of war/terrorism and independent, critical thinking skills on international conflicts as a whole.

**POL 1812. Political, Social, and Military Conflict in American Film.** (IC; 4.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) An initial exploration of how motion pictures portray political, social, and military conflict in different periods of U.S. history. Students examine the images and messages of various kinds of political conflict as projected in American film and connect these portrayals to both the historical and social context of the times and to Hollywood's commercial objectives and elite biases. Specific topics include America's political founding and "civilizing" of the West, the civil rights movement and the struggle for LGBT rights, the politicized justice system, political leadership and corruption, war as heroic and tragic struggle, and dystopian political visions of America's future.

**POL 1993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**POL 2001. Political Science Research Methods.** (SS; 4.0 cr.; prereq any 1xxx-level UMM Pol course, major or minor or #; fall, every year) Students conceive and develop research questions and hypotheses; collect and critically review published research on their topic; analyze empirical evidence using statistical software; and write clearly, forcefully, and logically about their research. Examination of the philosophy and critiques of social-science methods.

**POL 2221. The American Judicial Process.** (SS; 2.0 cr.; spring, odd years) A half-semester course examining the common law system as broadly practiced in the United States, including types of legal recourse, the structures of state and federal judicial systems, how judges are selected, and the various influences on their decisions.

**POL 2222. The U.S. Supreme Court.** (SS; 2.0 cr.; spring, odd years) A half-semester course specifically looking at the role of the Supreme Court in U.S. politics with an emphasis on its historical development, how it interacts with the other federal branches, and the decision-making process of the justices on the Court.

**POL 2234. Race, Class and Power: Social Movements in U.S. Politics.** (HDIV; 2.0 cr.; spring, even years) Using a case study approach, this half-semester course examines a variety of social movements from across U.S. history. Addresses questions such as why social movements arise, how they succeed or fail, and how the American political system adapts to their influence.

**POL 2235. Race, Class and Power: Interest Groups in U.S. Politics.** (HDIV; 2.0 cr.; spring, even years) A half-semester course focusing on the growth and importance of interest groups in U.S. politics by looking at different types of interest groups, the tactics they use to try to influence the political system, how successful they are at doing so, and whether this system works for the public good.

**POL 2261. States: Laboratories of American Democracy.** (E/CR; 2.0 cr.; prereq 1201 or #; spring, offered periodically) Examination of the ways American democracy functions in the states. Analysis of principles, organizations, procedures, and functions of state government in the United States, with particular emphasis on comparing state politics and policy outcomes. [Note: no credit for students who have received credit for Pol 3261]

**POL 2262. Power and Politics in American Cities and Communities.** (E/CR; 2.0 cr.; spring, even years) Explores the nature of political power and institutions in urban, suburban, and rural communities, along with cultural and economic forces. Analyzes political and policy trends in metropolitan and rural areas. Includes relevant experiential or service projects in surrounding communities.

**POL 2301. Anarchy and Utopia.** (HUM; 2.0 cr.; fall, offered periodically) An analytical survey of anarchist thought and utopian ideals that are used to challenge modern political and social systems. The course draws from scholarly work as well as fiction, films, and mixed media sources.

**POL 2302. Gandhi and the Politics of Resistance.** (SS; 2.0 cr.; fall, offered periodically) A study of Gandhi's theory and practice of satyagraha and swaraj as forms of nonviolent political resistance and human realization. Places Gandhi within the historical and theoretical context of Indian political thought and colonialism and examines the influence of Gandhi's politics of resistance on international political theory.

**POL 2354. Political Ethics.** (E/CR; 4.0 cr.; fall, offered periodically) Examination of the strengths, weaknesses, and implications of moral arguments in political decision making. Ethical frameworks drawn from theoretical readings are applied to a range of contemporary U.S. case studies such as state use of violence, interrogation in times of war, governmental secrecy and deceit, official disobedience, health-care access, welfare reform, and environmental regulation and protection. [Note: no credit for students who have received credit for Pol 3354]

**POL 2401. U.S. Foreign Policy.** (IP; 4.0 cr.; fall, even years) American diplomatic history. Institutions and processes of American foreign policy. Major factors to be considered and levels of analysis that allow for the examination and dissection of foreign policy decisions. [Note: no credit for students who have received credit for Pol 3401]

**POL 2411. The United Nations: Simulated Negotiations.** (IP; 2.0 cr.; spring, odd years) Through simulated negotiations and mock conferences, students gain understanding of the complexities involved in international negotiations at the United Nations (UN). The functions and workings of the UN, peacemaking, negotiation skills, and negotiation strategies.

**POL 2461. Diplomatic Negotiation.** (IP; 4.0 cr.; summer, offered periodically) Discusses negotiation strategies and tactics and examines negotiation skills through a series of simulated negotiations and mock conferences. Diplomacy, negotiation styles, negotiation simulations, and mock conferences. [Note: no credit for students who have received credit for Pol 3461]

**POL 2501. East Asian Society and Politics.** (SS; 4.0 cr.; fall, odd years) Examination of governments, political and leadership changes, and economic developments in China, Japan, and Korea. Modernization, democratization, political pluralism, revolution, authoritarianism, and civil-military relations. [Note: no credit for students who have received credit for Pol 3501]

**POL 2993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**POL 3201. Legislative Process.** (SS; 4.0 cr.; prereq 1201 or #; spring, offered periodically) The internal organization of Congress and state legislatures, with emphasis on how rules and organizational changes affect the policy process. Topics include the evolution of the modern Congress and state legislatures, the committee system, the role of party leadership, and competing theories of congressional organization and behavior.

**POL 3211. The American Presidency.** (SS; 4.0 cr.; prereq 1201 or #; spring, offered periodically) Traces the development of the American presidency over time. Major theories of presidential behavior and success are examined, as well as the literature on presidential popularity and executive/congressional relations.

**POL 3231. Constitutional Law: Civil Liberties and Civil Rights.** (HDIV; 4.0 cr.; =[POL 3233; prereq 1201 or #; fall, even years)
POL 3232. Constitutional Law: Governmental Powers and Constraints. (SS; 4.0 cr.; prereq 1201 or #; fall, odd years) Case-based examination of major Supreme Court opinions dealing with separation of powers, checks and balances, and issues of federalism. Specific topics include the importance of due process, the Contract Clause, the power to tax and spend, the Commerce Clause, and the struggle to define national and state powers. [Note: this course is one part of a two-part set of courses covering Constitutional Law; these courses may be taken in any order]

POL 3251. Political Participation and Voting Behavior. (SS; 4.0 cr.; prereq 1201 or #; fall, even years) Examination of factors which influence political behavior such as voting, protesting, attending political rallies, and working in campaigns in the U.S. context. Specific attention is paid to voting demographics, recent elections, change in behavior over time, and the various ways in which citizens are engaged or not with the political system. Included is a strong practical focus on mid-term or presidential elections occurring at the same time as the course is offered. [Note: no credit for students who have received credit for Pol 4251]

POL 3263. Political Psychology. (SS; 4.0 cr.; prereq 1201; Psy 1051 or # recommended; spring, odd years) Examines the intersection of political science and psychology research, particularly on topics such as personality, emotions, and cognition. Explores the various roles of individuals and groups in political decision-making, emphasizing the connections between how we think and learn and how we structure society and make political choices.

POL 3266. Media and Politics. (SS; 4.0 cr.; prereq 1201 or #; fall, odd years) Examination of the relationships between mass media, government, and public in American democracy. Focus on the role of informed citizenry in theories of U.S. democracy, role of media in informing the U.S. citizenry, and the methods by which this occurs or fails to. Specific attention is given to the ways media influences public opinion, the effects of media, such as framing, agenda setting, and priming, and relationship of media, public opinion, and elites in politics. [Note: no credit for students who have received credit for Pol 4266]

POL 3272. Making Environmental Public Policy. (ENVT; 4.0 cr.; prereq 1101 or 1201 or 1401; spring, even years) Exploration of the domestic and international politics of environmental and energy policy making. Focus on theoretical frameworks for policy making and political behaviors surrounding development of environmental and energy policies. Includes the applications of political dynamics and principles to specific areas of environmental and energy policy. Emphasis given to policies of policy implementation.

POL 3302. Islamic Political Thought. (SS; 2.0 cr.; prereq 1101 or #; fall, even years) Examination of historical and contemporary perspectives on Islam and politics that draws from a diverse range of Muslim and non-Muslim political thinkers and scholars. Particular attention given to the global discourse on Islam and democracy.

POL 3303. Feminist Political Theory. (SS; 2.0 cr.; prereq 1101 or #; offered periodically) Examination of various ways of understanding gender through study of diverging perspectives within feminist political theory in conjunction with critical analysis of the relationships of feminist theory to political action.

POL 3351. Ancient and Medieval Political Thought. (HUM; 4.0 cr.; prereq 1101 or #; spring, odd years) A survey of Western social and political thought from 5th century BCE through the 15th century.

POL 3352. Modern Political Thought. (HUM; 4.0 cr.; prereq 1101 or #; spring, even years) A survey of Western social and political thought from the 16th through the 19th centuries.

POL 3355. Environmental Political Theory. (ENVT; 4.0 cr.; fall, odd years) An examination of political understandings of the relationship between humans and the natural environment. Topics include Western and non-Western perspectives on the environment, technological optimism and environmentalism, the tragedy of the commons, environmental direct action movements, the environmental justice movement, and theories of green democracy and citizenship. Readings cover a variety of political perspectives and ideologies including neocorporatism, libertarianism, ecoanarchism, ecocentrism, social ecology, deep ecology, and postmodernism.

POL 3411. International Law. (ECR; 4.0 cr.; prereq 1401 or #; spring, even years) Relations of international law to individuals, states, the international community, jurisdictional problems, survey of principles developed by diplomatic agents and consuls, treaties, arbitration, treatment of aliens, pacific settlement. War, military occupation, war crimes, neutrality.

POL 3451. Comparative Foreign Policy. (4.0 cr.; prereq 1401 or #; spring, odd years) Comparative examination of foreign policies of the United States, China, and Russia. Topics include Sino-American relations, Sino-Russia relations, China's rise, Russia's resurgence, global war on terrorism, and nuclear proliferation. [Note: no credit for students who have received credit for Pol 4451]

POL 3453. Russian Politics and Foreign Policy. (IP; 4.0 cr.; prereq 1401 or #; spring, offered periodically) Domestic and foreign policies of Russia and the former Soviet Union from the Bolshevik Revolution to the present. Nature of the Soviet empire, Russian Federalism, democratic and market reforms, and Russian foreign relations.

POL 3475. International Human Rights. (4.0 cr.; prereq 1401 or #; spring, odd years) Explores the historical and philosophical development of concepts of human rights and the contemporary international political and legal frameworks to address rights. Analyzes contemporary concerns about political, economic, and social rights, as well as specific human rights topics like human trafficking and war crimes. Compares American, European, Asian, and Developing World conceptions and critiques of human rights.

POL 3504. Latin American Politics. (4.0 cr.; prereq 1401 or #; fall, offered periodically) A comparative examination of central issues in and components of Latin American political life, with a particular focus on economic development, political development of democratic regimes, political violence and human rights, and the region's role in the world. Countries analyzed may include Argentina, Brazil, Chile, Colombia, El Salvador, Mexico, Peru, and Cuba.

POL 3514. Pyramids and Politics on the Nile. (IP; 4.0 cr.; prereq #; summer, offered periodically) Four-week study-abroad course on Egyptian political history with an emphasis on the environmental challenges of the Nile River Valley. Guided excursions, guest speakers, and individual exploration at significant political, historical, and cultural sites in the Cairo area and along the Nile Valley from Aswan to Alexandria.

POL 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

POL 3996. Field Study in Political Science. (1.0-16.0 cr.; fall, spring, every year) Field study of governmental organization; internship with legislature, a state or local administrative office, lobbying group, or other position involving direct experience with government, governmental officials, or political organizations and environment. [Note: max of 4 cr may be applied to the major or minor]

POL 4205. Seminar in American Politics. (4.0 cr.; A-F only; prereq 1201, 2001 or #; fall, every year) The course includes class meetings based on scholarly readings, student-led critical discussion, as well as time devoted to independent research leading to a substantive research paper.

POL 4305. Seminar in Political Theory. (4.0 cr.; prereq 1101, 2001 or #; fall, odd years) The course includes class meetings based on scholarly readings, student-led critical discussion, as well as time devoted to independent research leading to a substantive research paper.
POL 4405. Seminar in Comparative Politics and International Relations. (4.0 cr.; prereq 1401, 2001 or #; spring, every year)
The course includes class meetings based on scholarly readings, student-led critical discussion, as well as time devoted to independent research leading to a substantive research paper.

POL 4905. Senior Research Seminar in Political Science. (2.0 cr.; prereq 2001, Stat 1601 or Stat 2601, at least one Pol 4XXX course; fall, spring, every year)
Guided research in political science. Requires the refinement and expansion of a research paper students previously completed in a 4000-level political science course. The end result of this revision and expansion is an original, significant research paper of a substantial length. Also requires that the student make an oral presentation of the final work to the discipline faculty and graduating seniors. With faculty approval, the student may produce such a paper based on a research paper previously completed in a 3000-level political science course.

POL 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Psychology (PSY)

Division of Social Sciences

PSY 1051. Introduction to Psychology. (SS; 4.0 cr.; fall, spring, every year)
An introduction to the science of mind and behavior. Topics include history of psychology, research methods, biological bases for behavior, life span development, sensation and perception, learning, cognitive and social processes, personality, psychopathology, and applications of psychology.

PSY 1301. Psychology and Film. (SS; 4.0 cr.; summer, offered periodically)
The application of psychological theories and principles, with emphasis on social psychology, to film. Examination of how films apply to psychological theories and principles and how audiences impact upon movie viewing. Class activities include watching films and then analyzing them from a psychological perspective.

PSY 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on-or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PSY 2001. Research Methods in Psychology. (SS; 4.0 cr.; prereq 1051, Stat 1601 or Stat 2601, psy major or minor, or #; fall, spring, every year)
Design, analysis, and interpretation of research in psychology. Instruction on different research techniques and ethics in research. Students conduct, analyze, and evaluate empirical research and gain experience preparing APA-style research reports. Includes laboratory/discussion sessions.

PSY 2112. Psycholinguistics. (SS; 4.0 cr.; A-F only; prereq 1051; spring, offered periodically)
An introduction to the crossroads of psychology and linguistics. Topics include: introduction to linguistics, language production and comprehension at various levels, dialogue, language development, reading, and language abnormalities. Specific methods are discussed throughout.

PSY 2311. Psychology of Excellence. (SS; 4.0 cr.; prereq 1051; spring, offered periodically)
Intervention strategies for enhancing performance in life settings as diverse as academics, career, athletics, performing arts, and interpersonal relations. Psychological theories and research pertaining to the strategies are also covered. [Note: no credit for students who have received credit for IS 1042]

PSY 2411. Introduction to Lifespan Developmental Psychology. (SS; 4.0 cr.; prereq 1051; fall, every year)
An introduction to theory, data, and research approaches in development from the prenatal period through childhood, adolescence, adulthood, and aging until the cessation of life. Includes physical, perceptual, cognitive, language, moral, personality, socio-emotional, family, and career development and changes over time, as well as issues of death, dying, and bereavement. Includes a multicultural focus.

PSY 2581. Drugs and Human Behavior. (SS; 2.0 cr.; prereq 1051 or #; spring, every year)
Survey of psychoactive drugs, their effects on mind and behavior, and prevention and treatment of drug abuse. [Note: no credit for students who have received credit for Psy 1081]

PSY 2612. Environmental Psychology. (4.0 cr.; prerequisite 1051; spring, offered periodically)
Environmental psychology is the study of the relationship between humans and natural and built environments. Traditionally, the emphasis in environmental psychology has been on how human behavior, feelings, and well being are impacted by the environment. Currently, there is an increased emphasis on how humans impact natural environments. This course examines the theories guiding research in this field and reviews the research as it applies to topics such as the effects of weather and climate on behavior, urban and rural environments, crowding, and personal space.

PSY 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PSY 3051. The Psychology of Women and Gender. (HDIV; 4.0 cr.; prereq 1051 or #; spring, every year)
Exploration of the interactive biological, psychological, and socio-cultural processes that shape the lives of women and the experience of gender. Topics include: the psychobiology of sex; the social construction of sex and gender; socialization and development; media representations; identity and sexuality; language and communication; motivation and personality; relationships; work and family lives; mental and physical health; mid- and later life development; victimization; therapy; intersections of race, class, and gender; and feminist approaches to teaching, learning, and knowing.

PSY 3101. Learning Theory and Behavior Modification. (4.0 cr.; prereq 2001 or #; fall, every year)
Major theories of learning and their importance for understanding human and nonhuman behavior. Classical and operant conditioning, generalization, discrimination, stimulus control, animal cognition. Behavior modification theories and techniques and their application to clinical populations. Lab projects demonstrate learning and behavior modification theories, concepts, and techniques and illustrate research methods and theory testing. Includes lab.

PSY 3111. Sensation and Perception. (4.0 cr.; prereq 2001 or #; spring, every year)
Empirical study of sensory processes and perceptual organization with emphasis on vision and audition. Anatomy and physiology of sense organs, psychophysics, signal detection theory, attention, speech perception, and perceptual-motor coordination. Includes lab.

PSY 3112. Cognition. (4.0 cr.; prereq 2001 or #; spring, every year)
Empirical study of memory, language behaviors, representation of knowledge, judgment, decision making, problem solving, and creative thinking. Includes lab.

PSY 3201. Comparative Psychology. (SCI-L; 4.0 cr.; prereq [1051, 2001] or Biol 2111; spring, every year)
Comparison of the causations of human and non-human animal behavior from both an evolutionary and biological point of view. The contributions of evolutionary selection pressures, genetics, environment, learning, and culture on the expression of behavior in a wide variety of species, through topics such as adaptation, fitness, altruism, social behavior, parental care, reproductive behavior, mating systems, and aggression. Focus on explaining modern human behavior as informed by non-human behavior. Includes lab component.

PSY 3211. Biological Psychology. (SCI-L; 5.0 cr.; prereq [1051, 2001] or Biol 1101 or Biol 1111; fall, every year)
Brain organization and function; an emphasis on an understanding of the neural processes that underlie human and nonhuman behavior. Incorporates information from psychology, neuroscience, endocrinology, physiology, chemistry, neurology, and zoology to investigate the physiological bases of behavior. Topics include sensory processes, drugs and addiction, biological rhythms, sexual differentiation, reproduction, methods in
Theory, data, and research in development from conception to adolescence. Prenatal and physical development as well as perceptual, cognitive, personality, and social development. Language acquisition and Piaget's theory of cognitive development.

PSY 3402. Developmental Psychology II: Adolescence and Emerging Adulthood. (4.0 cr.; prereq 1051 or #; spring, every year)
Theory, data, and research in adolescent development with emphasis on physical, cognitive, and social development.

PSY 3403. Developmental Psychology III: Adulthood and Aging. (E/CR; 4.0 cr.; prereq 1051 or #; fall, every year)
An overview of current concepts, theories, and methods in the study of adult development and aging.

PSY 3404. Culture and Human Development. (HDIV; 4.0 cr.; prereq 1051; spring, every year)
Examination of the role of culture in human development through current research and examples from around the world. Learn about similarities and cultural differences in human development, and the regularities that explain these variations. Topics include the concept of culture in developmental psychology, diversity in child rearing practices, enculturation, gender roles, schooling, development in multicultural contexts, and the influence of technology and cultural change on development. Students learn to think culturally about their own development and see how it applies to their future careers.

PSY 3501. Social Psychology. (4.0 cr.; prereq 1051 or Soc 1101 or #; fall, every year)
Theories and research in the study of interpersonal behavior. Topics include aggression, prejudice, altruism, persuasion, group dynamics, and social influence.

PSY 3502. Psychology and Law. (4.0 cr.; prereq 1051; spring, even years)
A psychological perspective to the law and to the legal system. Topics include jury decision making, forensic psychology, trial processes, eyewitness testimony, and sentencing.

PSY 3503. Consumer Behavior. (SS; 4.0 cr.; =[MGMT 3503]; prereq Stat 1601 or Stat 2601 or #; spring, every year)
Same as Mgmt 3503. Psychological basis for understanding consumers. Some of the topics include consumer behavior, consumer decision processes, and consumer judgments and decisions.

PSY 3504. Educational Psychology. (4.0 cr.; prereq 1051; spring, offered periodically)
Discussion of psychological principles/theories in relation to learning in academic settings. Topics may include: a consideration of developmental and social issues that are likely to impact the learner; a discussion of individual differences in learning; an examination of different theoretical approaches to learning applied specifically to educational settings; an analysis of factors related to student motivation and behavior; and a discussion of issues related to testing and measurement in academic settings.

PSY 3513. Negotiation. (4.0 cr.; =[MGMT 3513]; prereq 3501 or Mgmt 3221 or Psy/Mgmt 3701; spring, offered periodically)
Same as Mgmt 3513. Examines the theoretical and applied aspects of negotiation. Topics include negotiation theory, strategy, skills and tactics, communication processes, global negotiation, and ethics. Use of negotiation simulations.

PSY 3521. Health Psychology. (4.0 cr.; prereq 1051; spring, every year)
Health implications of interactions among behavioral, environmental, and physiological states. Physiological bases of behavior and health; stress and coping; behavioral antecedents of disease; psychoimmunology; disease prevention and health promotion.

PSY 3542. Multicultural Psychology. (HDIV; 4.0 cr.; =[PSY 3541]; prereq 1051; fall, every year)
Theoretical and methodological approaches to multicultural psychology. Multicultural psychology is the systematic study of behavior, cognition, and affect settings where people of different backgrounds interact. Exploration of these interactions both within and outside of the United States. Topics may include worldviews, communication styles, acculturation, prejudice, white privilege, identity development, physical and mental health, and multicultural competencies.

PSY 3611. History and Philosophy of Psychology. (HIST; 4.0 cr.; prereq 1051 or #; spring, even years)
Historical roots and comparative features of major theoretical systems in psychology, including scientific methodology, research interests, and techniques. Movements within psychology that are discussed include: structuralism, functionalism, behaviorism, Gestaltism, psychoanalytic, and existential movements and their modern syntheses, as well as other topics of interest to students.

PSY 3701. Organizational Behavior. (SS; 4.0 cr.; =[MGMT 3701]; prereq Stat 1601 or Stat 2601, jr or sr; fall, offered periodically)
Same as Mgmt 3701. Uses the theories and research of the behavioral sciences to understand how organizations function at the individual, group, and organizational levels. Topics include stress in the workplace; group dynamics; power, leadership, and attribution theory.

PSY 3800. Research Practicum. (1.0-12.0 cr.; S-N only; fall, spring, every year)
Research activity carried out under the supervision of a psychology faculty member.

PSY 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

PSY 4101. Helping Relationships. (4.0 cr.; prereq 8 cr 3xxx or 4xxx Psy or Soc or Anth courses or #; fall, every year)
Approaches to counseling and psychotherapy. Theories of helping relationships. Acquisition
of helping skills, including attending behavior, reflection of feeling, paraphrasing, confrontation, and summarization. Major humanistic, cognitive, and behavioral approaches to therapy, including observation of counseling and psychotherapeutic techniques, and practical experiences.

**PSY 4102. Intro to Prof Conduct, Legal Constraints, Ethics in Human Services.** (E/CR: 2.0 cr.; prereq jr, 8 cr 3xxx or 4xxx Psy or Soc or Anth courses or #; fall, spring, every year)

Concepts of professional ethics in human services professions; ethically relevant legal mandates and constraints on professional practice; practical problems in the application of ethical principles. [Note: no credit for students who have received credit for IS 4101]

**PSY 4301. Clinical Assessment and Therapeutic Interventions.** (4.0 cr.; prereq 3313 or 3314 or 4101; spring, every year)

Evaluation of psychological assessments and interventions from different perspectives. Topic examples: structured and unstructured assessments; career counseling and assessment; motivational interviewing; family and couples therapy; interpersonal therapy; group therapy; and solution-focused therapy.

**PSY 4770. Empirical Investigations in Psychology.** (4.0 cr.; A-F only; prereq 2001, #; fall, every year)

A yearlong class that provides students with an opportunity to conduct their own research. Students work independently or in groups. Students review an area of psychology, generate a hypothesis, design a study, obtain IRB approval, collect data, analyze data, submit and present their research to the Undergraduate Research Symposium or other instructor-approved venue and write an APA style research paper. [Note: full year course begins in fall semester]

**PSY 4771. Independent Research in Psychology.** (1.0-6.0 cr. [max 12.0 cr.]; A-F only; prereq 2001, #; fall, spring, every year)

Supervised independent research by a student in any area of psychology. A research proposal may be required by a faculty member prior to approval to enroll in the course. The student is required to write an APA style research paper or give a public presentation.

**PSY 4896. Field Experiences in Psychology.** (1.0-4.0 cr.; S-N only; fall, spring, every year)

Individually arranged, supervised observation of field experiences with professionals in psychology in schools, clinics, hospitals, and other field settings. Prereq-Normally requires 4101, 4102, other courses appropriate to field experience. [Note: only 4 cr may be applied to the BA or the Psy major]

**PSY 4910. Advanced Seminar in Learning or Cognitive Psychology.** (4.0 cr.; A-F only; =PSY 4710); prereq 2001, 3101 or 3111 or 3112, sr status, #; spring, every year)

Advanced seminar on selected topics in the area of Learning or Cognitive Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4920. Advanced Seminar in Biological or Comparative Psychology.** (4.0 cr.; A-F only; =PSY 4720); prereq 2001, 3201 or 3211, sr status, #; spring, every year)

Advanced seminar on selected topics in the area of Biological and Comparative Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4930. Advanced Seminar in Personality or Clinical Psychology.** (4.0 cr.; A-F only; =PSY 4730); prereq 2001, 3302 or 3313 or 3314, sr status, #; fall, every year)

Advanced seminar on selected topics in the area of Personality or Clinical Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4940. Advanced Seminar in Developmental Psychology.** (4.0 cr.; A-F only; =PSY 4740); prereq 2001, 3401 or 3402 or 3403, sr status, #; fall, every year)

Advanced seminar on selected topics in the area of Developmental Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4950. Advanced Seminar in Social Psychology.** (4.0 cr.; A-F only; =PSY 4750); prereq 2001, 3501, sr status, #; spring, every year)

Advanced seminar on selected topics in the area of Social Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4960. Advanced Seminar in Health Psychology.** (4.0 cr.; A-F only; =PSY 4760); prereq 2001, 3521 (or 3201 and 3211), sr status, #; fall, every year)

Advanced seminar on selected topics in the area of Health Psychology. Members of the seminar read and discuss primary source material on a topic of common interest. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4970. Advanced Seminar in Psychology.** (4.0 cr.; A-F only; prereq 2001, one or more courses from 3 of the 5 psy major cores, sr status, #; fall, spring, every year)

Advanced seminar on selected topics in the area of Psychology. Members of the seminar read and discuss primary source material on a topic selected by the instructor. In addition, each student investigates a related topic in greater depth. The student writes a paper and gives a public presentation based on the in-depth investigation.

**PSY 4993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**Science Education Methods (SCIE)**

Division of Education

**SCIE 4211. Methods of Teaching Science in the Middle and Secondary School.** (4.0 cr.; A-F only; prereq admission to the secondary teacher education program or elementary education program or coreq SeEd 4102, SeEd 4103 or prereq ELED 3202, ELED 3212; fall, every year)

Objectives, curricula, special methods, materials, and evaluation appropriate for teaching science in the middle and secondary school.

**Secondary Education (SEED)**

Division of Education

**SEED 3993. Directed Study.** (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)

An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

**SEED 4102. Teaching and Learning Strategies.** (2.0 cr.; A-F only; prereq admission to the secondary teacher education program; coreq 4103, 4104, 4105, methods; fall, every year)

Provides greater depth in previously taught concepts and skills, including teaching and learning strategies for middle and secondary classrooms, planning for lesson and unit instruction and assessment, learning theory, use of technology in the classroom, discipline, and classroom management.

**SEED 4103. Practicum Experience in the Middle and Secondary School.** (4.0 cr.; S-N only; prereq admission to the secondary teacher education program; coreq 4102, 4104, 4105, methods; fall, every year)

Field experience in the middle and secondary school.

**SEED 4104. Teaching Diverse Learners.** (HDIV; 2.0 cr.; A-F only; prereq admission to the secondary teacher education program; coreq 4102, 4103, 4105, methods; fall, every year)

Study of teaching/learning in diverse settings. Topics include multiple intelligences/learning styles; multicultural education; race, gender, sexual orientation, disability, culture, and class; effects of inequity on schooling; preventing and responding to prejudice and discrimination; and intercultural communication.
SEED 4105. Reading and Literacy in the Content Areas. (2.0 cr.; A-F only; prereq admission to the secondary teacher education program; coreq 4102, 4103, 4104, methods; fall, every year) Study of how teachers in the various academic disciplines can support reading and literacy in their classrooms and use reading and literacy to enhance learning in the disciplines. Topics include theory and instructional strategies in the areas of reading comprehension, fluency, and vocabulary development.

SEED 4115. Advanced Content Reading. (HUM; 2.0 cr.; A-F only; prereq 4105; fall, spring, every year) Study of how teachers in the various academic disciplines can support reading and literacy in their classrooms and use reading and literacy to enhance learning in the disciplines. Topics include subject-specific theories, strategies, and projects.

SEED 4201. Directed Student Teaching in the Middle and Secondary School. (HDIV; 12.0 cr.; S-N only; prereq 4102, 4103, 4104, 4105, methods, CMR 1042 or CMR 1052, passing scores on MTLE basic skills or #; spring, every year) Students teach for a period of 10 to 12 weeks demonstrating application of approaches to teaching and learning in the middle and secondary grades under the guidance of a cooperating teacher and University supervisor. [Note: special fee required]

SEED 4202. Directed Student Teaching in the Middle and Secondary School. (1.0-16.0 cr.; S-N only; prereq passing scores on MTLE basic skills or #; fall, spring, every year) For students who need alternative or additional student teaching experience. Students demonstrate application of approaches to teaching and learning in middle and secondary grades under the guidance of a cooperating teacher and University supervisor. [Note: special fee required]

SEED 4204. Directed Student Teaching in International School at the Middle and Secondary Level. (IP; 12.0 cr.; S-N only; prereq 4102, 4103, 4104, 4105, methods, CMR 1042 or CMR 1052, passing scores on MTLE basic skills or #; spring, every year) Students teach for a period of 10 to 12 weeks demonstrating application of approaches to teaching and learning in the middle and secondary grades under the guidance of a cooperating teacher and University supervisor. [Note: special fee required]

SEED 4205. Directed Student Teaching in the Secondary School. (1.0-16.0 cr.; A-F only; prereq passing scores on MTLE basic skills or #; fall, spring, summer, every year) For students from colleges that require A-F grading for student teaching through the Global Student Teaching Program. [Note: special fee required]

SEED 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Social Science Educ Methods (SSCE) Division of Education

SSCE 4212. Methods of Teaching Social Science in the Middle and Secondary School. (4.0 cr.; A-F only; prereq admission to the secondary teacher education program or elementary education program, coreq SeEd 4102, SeEd 4103 or prereq ELED 3202, ELED 3212; fall, every year) Objectives, current teaching methods, materials, and evaluation appropriate for teaching social science in the middle and secondary school.

Sociology (SOC) Division of Social Sciences

SOC 1101. Introductory Sociology. (SS; 4.0 cr.; fall, spring, every year) Introduction to the field of sociology, the exploration of societies, and how societies operate. Sociology broadens social insights, fosters critical thinking, guides analytical thinking, and develops writing skills. By actively thinking about issues facing societies today, students learn to examine life situations and the influence of societies and groups on people's lives, careers, hopes, fears, and personalities. Emphasis on how society is stratified: how organizations and institutions influence the way people think, talk, feel, and act and how different groups (e.g., racial and ethnic) and divisions (e.g., gender and social class) within society have different access to power and privilege. People live their lives in relation to social and physical environments; sociologists study these environments and their effects on people's experiences and behavior.

SOC 1811. Global Sociology: Migration, Economic Globalization, Class, and Gender Inequality. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Examination of the global impact of migration on both societies, current immigrant societies from which people emigrate, the effect of economic globalization, class and gender inequality. A major goal of the course is to provide students with a systematic way of making sense of a rapidly changing and complex world. Learn from sociological perspectives what it means to live in an interdependent world.

SOC 1812. Human Rights in the Age of Globalization. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; spring, offered periodically) Exploration of the relationship between globalization and human rights. Globalization as the driving force of capitalism has produced both positive and negative impacts on human rights. Optimists argue that integration into the global world of the free market will foster democracy and human rights, while critics challenge this optimism. Explores these contradictory views and processes. The course is interdisciplinary and integrates perspectives and concepts from different academic fields.

SOC 1813. Political Economy of "Natural" Disaster. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Examine the political economy of natural disasters through a survey of events drawn from around the world. Disasters can be viewed from multiple social perspectives (economic, political, ecological, and personal) and each of these carries implicit and explicit political judgments about how the environment should be managed. The following events offer rich documentation (academic and popular media) about the impact of governmental decisions prior to and in the aftermath of each event: famine-South Asian famine of 1770s, earthquake-Haiti 2010, deforestation/erosion-Nepal 1970s, hurricane-Katrina 2005, flood-Johnstown Flood of 1889, tsunami-South Asian tsunami of 2004.

SOC 1814. Water Unites, Water Divides: Sharing Water in the 21st Century. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) With the effects of climate change and the world's population increasing, demands for water have also intensified. Survey of water conflicts around the world with a view to assess how nations can better manage available water within and across borders.

SOC 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) Individualized on- or off-campus research project or other learning activity not covered in the regular Sociology curriculum. Topic determined by the student and instructor.

SOC 2101. Systems of Oppression. (HDIV; 4.0 cr.; prereq 1101 or Anth 1111 or #; fall, every year) Patterns of group dominance, exploitation, and hate in the United States and globally. Emphasis on sexism, racism, and classism with some attention to other systems of oppression such as heterosexism and ageism.

SOC 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) Individualized on- or off-campus research project or other learning activity not covered in the regular Sociology curriculum. Topic determined by the student and instructor.

SOC 3103. Research Methodology in Sociology. (4.0 cr.; prereq 1101; fall, every year) An introduction to research procedures used in sociology. Developing a research design and applying it to a concrete problem. Questions of validity and reliability examined in the context of research projects developed by the students.

SOC 3111. Sociology of Modernization. (IP; 4.0 cr.; prereq 1101 or Anth 1111 or #; spring, every year) Process of modernization in non-Western societies. Social, economic, and political impact of modernization from different theoretical perspectives. Assessment of those theoretical perspectives as a means to understand dynamics of change in Third World countries.
SOC 3112. Sociology of the Environment and Social Development. (ENVT; 4.0 cr.; prereq 1101 or #; fall, odd years) Introduces students to the sociological study of the environment and social development. Examines the impact of international and national environmental and development efforts on individuals at the local level. Focuses on grassroots environmental activism and social development work. Explores and discusses power relations and systems of inequality within the context of environmental and social development efforts.

SOC 3121. Sociology of Gender and Sexuality. (HDIV; 4.0 cr.; prereq 1101 or Anth 1111 or #; fall, every year) Introduces students to the sociological study of gender and sexuality. Focuses on gender difference and gender inequality. Analyzes the changing roles, opportunities, and expectations of women and men as their societies (and subsequently, gender relations and power) undergo change in today’s world. Following a theoretical overview, examines how gender and sexuality affect everyday experiences.

SOC 3122. Sociology of Childhoods. (HDIV; 4.0 cr.; prereq 1101 or #; spring, even years) Introduces students to the sociological study of childhoods. Examines the interaction between societies and their youngest members—how societies shape children’s lives through social institutions such as families, education, and the state. Takes a close look at children’s access to privileges and resources as determined by their experiences of race, gender, class, nationality, and social orientation.

SOC 3123. Sociology of Aging. (HDIV; 4.0 cr.; prereq 1101; spring, every year) An introduction to sociology of aging. Examination of the major theories of social aging as well as the historical and cross-cultural variations in aging and differences by race, ethnicity, gender, and social class.

SOC 3124. Sociology of Law. (4.0 cr.; prereq 1101; spring, every year) Explore the emergence and function of law through the lens of social theories. The course assumes law is embodied in the social structure of society; hence, it is the product of social interaction. Based on this assumption, it examines the role of law in maintaining and reproducing social order, class, race, and gender inequalities. The course is interdisciplinary and comparative in its scope and integrates jurisprudence and various social science theories.

SOC 3125. Terrorism, Law, and the State. (SS: 4.0 cr.; fall, offered periodically) Examination of issues of violence, justice, and the responses of the state. Integrate competing political views and different cross-cultural perspectives. Explore answers for some difficult questions such as defining terrorism, should states suspend constitutional rights and abrogate human rights to face the threat of terrorism; does terrorist violence differ from the violence perpetuated by nation-states? Students learn and assess the complexities of competing moral and ideological values of terrorists and that of the liberal democracies.

SOC 3131. World Population. (ENVT; 4.0 cr.; prereq 1101 or #; fall, every year) Population theory and demographic method. Dynamics of fertility and mortality as the basis of population forecasting and its policy implications. Emphasis on the tie between Third World demographic trends and population issues in the rest of the world.

SOC 3141. Sociology of Deviance. (E/CR; 4.0 cr.; prereq 1101 or #; fall, even years) Introduces students to the sociological study of deviance. Explores the social reality of deviance within contemporary society and examines the social construction of deviant categories. Focuses on images of deviance as social constructs, rather than as intrinsic elements of human behavior. Investigates the complex relationships between individual behavior and social structure, with a focus on power, inequality, and oppression. Also, examines the socio-cultural definitions of morality and behavior.

SOC 3204. Culture, Food, and Agriculture. (ENVT; 4.0 cr.; =ANTH 3204; prereq 1101 or Anth 1111 or #; spring, every year) Examines the globalization of food systems utilizing a political ecology perspective to understand global and local dimensions of production, marketing, and consumption. Emphasis on connections between food production and national identity, relations of power, genetic engineering, environmental destruction, the politics of world hunger, and local efforts to achieve sustainability.

SOC 3251. African Americans. (HDIV; 4.0 cr.; prereq 1101 or Anth 1111; fall, spring, offered periodically) Examination of African American religious, economic, political, family, and kinship institutions in the context of the greater American society. Studies to understand problems and the degree of success or failure of these struggles are examined and placed in historical context.

SOC 3252. Women in Muslim Society. (IP; 4.0 cr.; prereq 1101 or Anth 1111; spring, offered periodically) The cultures and social statuses of women in several Muslim countries are examined and placed in their political, economic, and religious contexts.

SOC 3403. Sociological Theory. (4.0 cr.; prereq 1101; 4 addit cr in Soc recommended; fall, every year) Survey of major developments in sociological theory, with attention to both classical and contemporary variants. Emphasis on sociological ideas in relation to the principal intellectual currents of European society, American society, and non-Western thought.

SOC 3601. Social Justice and Human Rights in Latin America. (IP; 4.0 cr.; =ANTH 3601; prereq 1101 or Anth 1111 or #; fall, every year) Same as Anth 3601. Examination of social, economic, and political transformations in Latin America with an emphasis on social justice and human rights. Critical approaches to understand U.S.-Latin America relations, labor struggles, rebellions to define alternative development, indigenous resistance to incorporation on external terms, ways of life, civil war and genocide, and efforts to create a more environmental and socially sustainable development.

SOC 3602. Women in Latin America. (IP; 4.0 cr.; =ANTH 3602; prereq 1101 or Anth 1111 or #; spring, every year) Same as Anth 3602. Study of the social, economic, and political positions of women in Latin American countries. Topics include class and ethnic differences, women in the labor force, and women’s participation in political movements through the lens of feminist theory.

SOC 3993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) Individualized on- or off-campus research project or other learning activity not covered in the regular Sociology curriculum. Topic determined by the student and instructor.

SOC 4991. Sociology Independent Project Seminar. (4.0 cr.; =SOC 4902, SOC 4901; prereq 3103, 3403; spring, every year) A capstone seminar to guide sociology majors in the completion of an independent study project, including selection and definition of a research project, designing and planning its execution, developing a literature review and bibliography, applying relevant theoretical perspectives to research materials, and organizing and writing a research paper.

SOC 4993. Directed Study. (1.0-5.0 cr.; max 10.0 cr.; fall, spring, every year) Individualized on- or off-campus research project or other learning activity not covered in the regular Sociology curriculum. Topic determined by the student and instructor.

Spanish (SPAN) Division of Humanities

SPAN 1001. Beginning Spanish I. (4.0 cr.; fall, summer, every year) Development of basic skills of Spanish (reading, speaking, writing, listening) and an introduction to the cultural contexts of Latin America and Spain.

SPAN 1002. Beginning Spanish II. (FL; 4.0 cr.; prereq 1001 or placement or #; fall, spring, summer, every year) Continuation of the sequence beginning with 1001.

SPAN 1003. Accelerated Beginning Spanish. (FL; 4.0 cr.; prereq placement or #; fall, spring, every year) An accelerated introductory Spanish course for students with prior experience and appropriate placement exam score to allow completion of the FL GER requirement with one semester of coursework. Development of basic skills of Spanish (reading, speaking, writing, listening) and an introduction to the cultural contexts of Latin America and Spain.

SPAN 1801. Hispanic Culture Through Cinema. (IC; 4.0 cr.; prereq new college
student in their first semester of enrollment at UMM; fall, offered periodically
An introduction to contemporary films from Spain and Latin America, showcasing innovative filmmakers from the Hispanic world, their representations of Hispanic societies through film, and their relationships to other international cinemas, with an emphasis on the medium as an art form rather than a commercial proposition.

SPAN 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SPAN 2001. Intermediate Spanish I. (IP; 4.0 cr.; prereq 1002 or 1003 or placement #; fall, every year)
Emphasizes the continued development of oral expression, vocabulary building, spelling, grammar, reading, and composition through the use of authentic materials such as short films and news features, cultural readings, literary selections, and contemporary music that strengthen students' proficiency in Spanish and their understanding of Hispanic cultures.

SPAN 2002. Intermediate Spanish II. (IP; 4.0 cr.; prereq 2001 or #; spring, every year)
Continuation of the sequence beginning with 2001.

SPAN 2121. Associated Languages: Intensive Portuguese. (IP; 4.0 cr.; prereq 2002 or Fren 2002 or #; fall, spring, offered periodically)
Intensive, accelerated study of the basic skills of Brazilian Portuguese (reading, writing, listening, and speaking) with emphasis on oral competency.

SPAN 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SPAN 3011. Conversation, Composition, and Culture. (IP; 2.0 cr.; prereq 2002 or #; fall, every year)
Practice in effective oral and written communication in Spanish for advanced students, with an emphasis on the diversity of contemporary Hispanic cultures and a review of basic grammatical concepts.

SPAN 3012. Spanish Grammar in Practice. (IP; 2.0 cr.; prereq 3011 or #; spring, every year)
A review of advanced Spanish grammar, with emphasis on areas of concern and challenge for the non-native speaker, and on strengthening academic writing skills in Spanish.

SPAN 3111. Readings in Spanish I. (HUM; 2.0 cr.; prereq 3011 or #; fall, every year)
Introduction to representative works of contemporary Hispanic literature from diverse genres and cultural contexts, with emphasis on strategies for comprehension and interpretation.

SPAN 3112. Readings in Spanish II. (HUM; 2.0 cr.; prereq 3012, 3111 or #; spring, every year)
Further examination of representative works of Hispanic literature from diverse genres, time periods, and cultural contexts, with emphasis on literary concepts and terminology, analysis, research and writing practices, and interpretation.

SPAN 3211. Literature and Culture of Latin America. (HUM; 4.0 cr.; prereq 3012, 3112, or #; fall, every year)
Study of important exemplary works of Latin American literary and cultural production through major historical periods. Texts are examined in light of multiple contexts, such as artistic, political, historical, and philosophical.

SPAN 3212. Literature and Culture of Spain. (HUM; 4.0 cr.; prereq 3012, 3112, or #; spring, every year)
Study of important exemplary works of Spanish (peninsular) literary and cultural production through major historical periods. Texts are examined in light of multiple contexts, such as artistic, political, historical, and philosophical.

SPAN 3651. Seminar: Miguel de Cervantes Saavedra's "El ingenioso hidalgo Don Quijote de la Mancha". (HUM; 4.0 cr.; prereq 3012, 3112 or #; fall, offered periodically)
Study of Miguel de Cervantes Saavedra's novel "El ingenioso hidalgo Don Quijote de la Mancha" in light of its socio-historical context.

SPAN 3654. Seminar: Sex, Love, and Marriage in Golden Age Spanish Literature. (HUM; 4.0 cr.; prereq 3012, 3112 or #; fall, offered periodically)
The theme of sex, love, and marriage in Golden Age Spanish Literature through prose, poetry, and theatre of the Golden Age (XVI-XVII centuries) Spain. Consideration of the gender relations and gender politics reflected in the works and the socio-historical context in which these works were produced.

SPAN 3681. Seminar: Romanticism and Revolution in 19th-Century Spain. (HUM; 4.0 cr.; prereq 3012, 3112 or #; offered periodically)
Study of representative texts (prose and poetry) from the first half of the 19th century in Spain, with emphasis on the expression of the Romantic vision within the particular political context of the period, marked by tensions between liberal reform and traditional conservatism.

SPAN 3682. Seminar: Realism and Reform in 19th-Century Spain. (HUM; 4.0 cr.; prereq 3012, 3112 or #; fall, offered periodically)
Study of representative texts (novels, stories, and essays) from the second half of the 19th century in Spain, with emphasis on the rise of realism as an exploration of the socio-political reality of the era and the need for reform. The focus is on general trends in Western cultures (e.g., industrialization, positivism, secularization).

SPAN 3683. Seminar: Modernity and Identity in Spain, 1900-1930. (HUM; 4.0 cr.; prereq 3012, 3112, or #; fall, offered periodically)
Study of representative texts (prose and poetry) from the early decades of the 20th century in Spain with particular emphasis on their responses to changes brought by modernity: advancing technology, modern psychology, political experimentation, spiritual exploration, and artistic innovation.

SPAN 3684. Seminar: Hispanic Film. (HUM; 4.0 cr.; prereq 3012, 3112 or #; spring, offered periodically)
View, study, and discuss relevant Hispanic films from Spain, Latin America, and the U.S.A. Consider films' cinematic techniques and their specific socio-cultural and socio-political contexts.

SPAN 3685. Seminar: Slavery and Abolition in Cuban Literature and Culture. (IP; 4.0 cr.; prereq 3012, 3112, or #; fall, spring, offered periodically)
A study of the major texts surrounding Cuban slavery from the 1812 Aponte slave rebellion to independence from Spain in 1898. How did 19th-century writers depict Cuban slave society? What was the relationship between literature, abolition, and independence?

SPAN 3686. Seminar: Writing History in Spanish American Literature. (HUM; 4.0 cr.; prereq 3011, 3012, or #; fall, spring, offered periodically)
A study of 20th- and 21st-century Latin American historical novels and the colonial and 19th-century texts on which they are based. How and why is the past mobilized to meet the needs of the present? How do historical events continue to haunt the present day?

SPAN 3687. Seminar: Afro-Hispanic Literature and Culture. (HDIV; 4.0 cr.; prereq 3011, 3012, or #; fall, spring, offered periodically)
An overview of the literature and culture of peoples of African descent in Spanish America from the colonial period to present day. How have Afro-Hispanics been marginalized from national projects in Spanish America? To what extent and under what circumstances has the group been included? How have Afro-Hispanic writers responded to larger culture?

SPAN 3688. Seminar: Literature and Gender in Nineteenth-Century Spain. (HUM; 4.0 cr.; prereq 3012, 3112 or #; fall, offered periodically)
An examination of 19th-century Spanish literature with primary emphasis on gender representation and construction. Readings include both canonical and lesser known works, by both male and female writers, that reflect an ongoing dialogue regarding traditional and shifting notions of gender identity and relations in Spain at the time.

SPAN 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year)
An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SPAN 4001. Research Symposium. (HUM; 4.0 cr.; A-F only; prereq #; spring, every year)
A capstone experience for majors, consisting of an introduction to research methods and
critical approaches to literature, as well as development of an independent research project and presentation. Spanish majors are required to complete a minimum of 16 of the 20 required credits at the 32xx and 36xx levels prior to registering for Span 4001. It is recommended to have all 20 of these credits completed prior to taking Span 4001.

SPAN 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Sport Studies and Athletics (SSA) Division of Education

SSA 1051. Fitness for Life. (2.0 cr.; fall, spring, every year) Factors associated with a positive lifestyle, assessment of each individual's current wellness status, and development of a personal lifetime program for improving one's quality of life.

SSA 1052. Societal Issues in Health and Wellness. (SS; 2.0 cr.; fall, spring, every year) A study of how perceptions of society's health and wellness issues affect our individual health/fitness choices.

SSA 1101. First Aid. (1.0 cr.; fall, spring, every year) Lectures, demonstrations, practical work in emergencies and first aid. Emphasis on accident prevention. Completion of the course prepares students for National Safety Council First Aid and CPR Certification.

SSA 1213. Golf. (0.5 cr. [max 1.0 cr.]; S-N only; fall, every year) Introductory instruction in the skills and techniques of golf.

SSA 1219. Strength Training. (0.5 cr. [max 1.0 cr.]; S-N only; fall, spring, every year) Introductory instruction in the skills and techniques of strength training.

SSA 1225. Wellness Skills: R.A.D.-Basic and Advanced Self Defense System. (1.0 cr. [max 2.0 cr.]; S-N only; fall, spring, every year) A hands-on comprehensive program of realistic, self-defense tactics and techniques for women. The only nationally approved self-defense class by the International Association of College Law Enforcement Administrators. Class curriculum is centered around physical self-defense techniques and situational awareness. The advanced section of the class builds on basic techniques and offers more options for increasing awareness and providing a deeper understanding of one's potential.

SSA 1231. Beginning Taekwondo. (0.5 cr. [max 1.0 cr.]; fall, spring, every year) Philosophy of the martial arts. Basic stances and blocking, kicking, and striking techniques, terminology, footwork and sparring fundamentals.

SSA 1233. Advanced Taekwondo. (0.5 cr. [max 1.0 cr.]; prereq 1231 or #; fall, spring, every year) Advanced stances and blocking, kicking, and striking techniques, terminology, footwork, and sparring fundamentals.

SSA 1401. Varsity Baseball (M). (0.5 cr. [max 2.0 cr.]; S-N only; spring, every year)

SSA 1402. Varsity Basketball. (0.5 cr. [max 2.0 cr.]; S-N only; spring, every year)

SSA 1403. Varsity Cross Country. (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1404. Varsity Football (M). (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1405. Varsity Golf. (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1406. Varsity Softball (W). (0.5 cr. [max 2.0 cr.]; S-N only; spring, every year)

SSA 1407. Varsity Tennis. (0.5 cr. [max 2.0 cr.]; S-N or Audit; spring, every year)

SSA 1408. Varsity Track and Field. (0.5 cr. [max 2.0 cr.]; S-N only; spring, every year)

SSA 1410. Varsity Volleyball (W). (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1411. Varsity Soccer. (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1412. Varsity Swimming & Diving (W). (0.5 cr. [max 2.0 cr.]; S-N only; fall, every year)

SSA 1801. Mind and Body: Mental Skills and Martial Arts. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, spring, offered periodically) Mental skills such as stress management, imagery, and concentration have been practiced for centuries by martial artists and more recently by elite performers in a variety of fields (e.g., athletics, artistic and dramatic performance, medicine, and business). These skills and more are introduced through readings, analyzed during discussions, emphasized via the practice of martial arts skills and techniques, and applied to students' individual needs. Readings come from current sport psychology literature as well as traditional Asian martial arts passages. Students engage in physical activity.

SSA 1802. The Olympics and Social Change: History of Women and Minorities in the Olympics. (IC; 2.0 cr.; prereq new college student in their first semester of enrollment at UMM; fall, offered periodically) Study the increasing diversity of the Olympics while focusing on select stories aligning with historical social movements. Emphasis is placed on the 1936, 1960, and 1968 Olympics while providing a broad overview of the history of the Olympics and its social implications.

SSA 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SSA 2102. Human Anatomy. (3.0 cr.; = [BIOL 2102]; prereq soph; fall, every year) Same as Biol 2102. Structure of human systems at their organ and cellular levels. (two 65-min lect, one 120-min lab)
SSA 2311. Sports Officiating. (2.0 cr.; summer, offered periodically) Knowledge of the rules, techniques, and mechanics for officiating basketball, baseball, and softball at the high school level.

SSA 2331. Personal Training Preparation. (2.0 cr.; S-N only; fall, spring, offered periodically) Concepts, theory, practice, and research in personal training and conditioning. Basic anatomy and physiology, principles of strength training, overview of training equipment, fitness assessments, designing individual exercise programs, legal liabilities, national certifications, and review of research. Preparation for national certification examinations in the areas of personal training and strength conditioning.

SSA 2333. The Story of Sports. (SS; 4.0 cr.; summer, offered periodically) Sports have become an important way to view and understand the broad developments of society in the 20th century. Many of these developments have been presented in the form of movies, music, poetry, short stories, novels, and stories handed down through the generations. Study these developments, how they are told through stories, and how sports can be useful for examining 20th century society and culture.

SSA 2401. Sociological Aspects of Sports. (SS; 2.0 cr.; spring, every year) Sociological aspects of physical education, sports, and recreation and the implications this knowledge has for effective teaching, coaching, and athletic training.

SSA 2402. Psychological Aspects of Sports. (SS; 2.0 cr.; prereq 2401; spring, every year) Psychological aspects of physical education, sports, and recreation and the implications this knowledge has for effective teaching, coaching, and athletic training.

SSA 2501. Sports in Media I. (SS; 2.0 cr.; A-F only; spring, every year) An introduction to the relationship between the media and sports in America. A broad range of topics include broadcast, print, and social media, as well as promotion and public relations and their roles as vehicles for promoting sports.

SSA 2502. Sports in Media II. (SS; 2.0 cr.; A-F only; prereq 2501; spring, every year) A continuation of Sports in Media I that will dissect and analyze the relationship between sports and media. Topics include the development, organization, and implementation of media tactics and associated historical social, cultural, and legal issues.

SSA 2993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SSA 3101. Sport Industry Analysis. (SS; 4.0 cr.; prereq 2302, Stat 1601 or Stat 2601 or #; spring, every year) An examination of the rapidly developing sports industry from a promotional and sales management perspective. Focus on sport promotion, sport consumers, sales, sponsorship, licensing, and e-commerce.

SSA 3172. Leadership in Sport Organizations. (SS; 2.0 cr.; A-F only; prereq 2302, Mgmt 3171; fall, offered periodically) Examination of theories and case studies of organizational leadership within sport. Students learn about additional theories and models of sport leadership and practice and develop their leadership skills. [Note: no cr for students who have received cr for Mgmt 3172]

SSA 3201. Coaching Practice. (1.0 cr.; S-N only; prereq #; fall, spring, every year) Supervised field experience in coaching, consisting of no fewer than 40 hours.

SSA 3210. Internship in Sport Studies and Athletics. (1.0-12.0 cr. [max 24.0 cr.]; S-N only; fall, spring, every year) An educational experience in a work environment providing field applications for the student's theoretical classroom learning experiences.

SSA 3993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

SSA 4101. Planning and Programming of Athletic Facilities. (4.0 cr.; prereq 3101; spring, every year) Theories/techniques in administration/management of sport enterprises including the steps in planning/building facilities for athletics, physical education, and sport for college, professional, and public use.

SSA 4102. Organization and Administration of Athletics and Recreation. (4.0 cr.; prereq 3101; fall, every year) Comprehensive analysis of organization and management of athletics and recreation.

SSA 4201. Sport Governance: Legal and Ethical Issues. (E/CR; 4.0 cr.; A-F only; prereq 2401, 2402, 4102; spring, every year) An integrative capstone for students in sport management. In addition to emphases in legal and ethical issues, it integrates knowledge from key areas of study in sport management. Includes an independent research project and a public presentation.

SSA 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

Statistics (STAT) Division of Science and Mathematics

STAT 1601. Introduction to Statistics. (M/SR; 4.0 cr.; prereq high school higher algebra; fall, spring, every year) Scope, nature, tools, language, and interpretation of elementary statistics. Descriptive statistics; graphical and numerical representation of information; measures of location, dispersion, position, and dependence; exploratory data analysis. Elementary probability theory, discrete and continuous probability models. Inferential statistics, point and interval estimation, tests of statistical hypotheses. Inferences involving one and two populations, ANOVA, regression analysis, and chi-squared tests; use of statistical computer packages.

STAT 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

STAT 2501. Probability and Stochastic Processes. (M/SR; 4.0 cr.; = [MATH 2501]; prereq Math 1101 or #; fall, offered periodically) Same as Math 2501. Probability theory; set theory, axiomatic foundations, conditional probability and independence, Bayes' rule, random variables. Transformations and expectations; expected values, moments and moment generating functions. Common families of distributions; discrete and continuous distributions. Multiple random variables; joint and marginal distributions, conditional distributions and independence, covariance and correlation, multivariate distributions. Properties of random sample and central limit theorem. Markov chains, Poisson processes, birth and death processes, and queuing theory.

STAT 2601. Statistical Methods. (M/SR; 4.0 cr.; prereq Math 1101 or Math 1021; fall, every year) Descriptive statistics, elementary probability theory; laws of probability, random variables, discrete and continuous probability models, functions of random variables, mathematical expectation. Statistical inference; point estimation, interval estimation, tests of hypotheses. Other statistical methods; linear regression and correlation, ANOVA, nonparametric statistics, statistical quality control, use of statistical computer packages.

STAT 2602. Mathematical Statistics. (M/SR; 3.0 cr.; fall, spring, every year) Descriptive statistics, elementary probability theory; laws of probability, random variables, discrete and continuous probability models. Statistical inference; point estimation, interval estimation, tests of hypotheses. Other statistical methods; linear regression and correlation, ANOVA, use of statistical computer packages.

STAT 2611. Mathematical Statistics. (M/SR; 4.0 cr.; prereq Math 1101; spring, every year) Introduction to probability theory. Principles of data reduction; sufficiency principle. Point estimation; methods of finding and evaluating estimators. Hypothesis testing; methods of finding and evaluating tests. Interval estimation; methods of finding and evaluating interval estimators. Linear regression and ANOVA.

STAT 2701. Introduction to Data Science. (M/SR; 4.0 cr.; = [CSCI 2701]; prereq Prereq-
repeated measures designs, observational randomized clinical trials, factorial designs, Cox regression model. Use of statistical computer packages.

STAT 4611. Statistical Consulting. (4.0 cr.; prereq 3601, 3611; fall, spring, offered periodically) Statistical consulting skills needed to deal effectively with clients or project teams, formulate statistical models, explain analyses, use standard statistical computer packages, and write reports in language understandable to non-statisticians.

STAT 4631. Design and Analysis of Experiments. (4.0 cr.; prereq 3601 or #; fall, spring, offered periodically) Design and analysis of experimental designs; blocking, randomization, replication, and interaction; complete and incomplete block designs; factorial experiments; crossed and nested effects; repeated measures; confounding effects.

STAT 4651. Applied Nonparametric Statistics. (4.0 cr.; prereq 1601 or 2601 or 2611 or #; fall, spring, offered periodically) Application of nonparametric statistical methods. Examples use real data, gleaned primarily from results of research published in various journals. Nonparametric inference for single samples, paired samples, and independent samples, correlation and concordance, nonparametric regression, goodness-of-fit tests, and robust estimation.

STAT 4671. Statistical Computing. (4.0 cr.; prereq 1601 or 2601 or 2611 or #; summer, offered periodically) Entering, exploring, modifying, managing, and analyzing data by using selected statistical software packages such as R or SAS. The use of statistical software is illustrated with applications of common statistical techniques and methods. Designed for students who have a basic understanding of statistics and want to learn the computing tools needed to carry out an effective statistical analysis.

STAT 4681. Introduction to Time Series Analysis. (4.0 cr.; prereq 3601 or #; fall, odd years) Introduction to the analysis of time series including those with a connection to environment such as spatial and spatio-temporal statistics. Randomness test, ARMA, ARIMA, spectral analysis, models for stationary and non-stationary time series, seasonal time series models, conditional heteroscedastic models, spatial random processes, covariance functions and variograms, interpolation and kriging.

STAT 4993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

TH 1040. Backstage on Broadway. (1.0 cr. [max 4.0 cr.]; S-N only; prereq #; fall, spring, offered periodically) Supervised field trip to New York; attending selected professional theatre productions; backstage tours; discussions with theatre professionals.

TH 1050. London Theatre Tour. (1.0 cr. [max 4.0 cr.]; S-N only; prereq #; fall, spring, offered periodically) Supervised field trip to London, England; attending selected professional theatre productions; backstage tours; discussions with theatre professionals.

TH 1060. Production Experience. (1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year) Participation in some aspect of theatre production other than performing (e.g., scenery, props, costumes, lighting). An interview and approval from theatre faculty is required.

TH 1070. Performance Experience. (ART/P; 1.0 cr. [max 8.0 cr.]; S-N only; prereq #; fall, spring, every year) Participation in theatrical production as a performer. A production audition is required with approval from the theatre faculty.

TH 1101. The Theatre Experience: An Introduction. (FA; 4.0 cr.; fall, every year) Fundamental examination and practical application of the theory, history, and practice of theatrical performance as a reflection of society. Focus is on the theatre event as a collaborative effort and transitory art form. (lecture, 2 hrs practicum) [Note: practicum two hours per week, selected from M-Th from 2:00-5:00 pm]

TH 1111. Fundamentals of Acting. (ART/P; 4.0 cr.; prereq 1101, theatre arts major or minor or #; fall, spring, every year) Approaches characterization from a physical and psychological view. Focus is on use of imagination, text analysis, body and voice to develop characters from modern realistic dramatic literature.

TH 1301. Fundamentals of Design. (ART/P; 4.0 cr.; fall, every year) Problem-solving approach to elements, principles, and functions of design; their place in the theatre and elsewhere.

TH 1993. Directed Study. (1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

TH 2101. Fundamentals of Directing. (ART/P; 4.0 cr.; prereq 1111, theatre arts major or minor or #; fall, every year) Introduces the practical components of the director as artist, teacher, and collaborator. Focus is on the craft of directing modern drama.
realistic dramatic literature through text analysis, communication of concepts, and stylistic techniques.

TH 2211. Creative Drama with Children. 
(ART/P; 4.0 cr.; prereq 1101 or theatre or elem ed major or #; fall, spring, offered periodically) Development of classroom skills in the use of dramatic techniques to teach a broad range of subjects to children. Exercises, presentations, and experiential learning techniques are modeled and practiced in class.

TH 2201. Voice and Movement. 
(ART/P; 4.0 cr.; prereq 1111; theatre arts major or minor or #; spring, every year) Explores the use of the voice and the body as means for expression in performance and everyday communication. Focus is on expansion and enhancement of vocal and physical skills through release of tension, posture, vocal exercises, and muscle extension.

TH 2211. Oral Interpretation. 
(ART/P; 4.0 cr.; offered alternate yrs; fall, spring, offered periodically) Introduces the study of literature through text analysis and performance. Focus is on the student's discovery of the aesthetic, communicative, and performative elements of a variety of personal narratives, prose, and poetry.

TH 2221. Readers' Theatre. 
(ART/P; 4.0 cr.; prereq 2211; fall, spring, offered periodically) Explores the theory and practice of adapting literature into group performance. Focus is on text analysis, script development, directing, and performing both dramatic and non-dramatic literary texts.

(ART/P; 1.0 cr.; S-N only; prereq #; spring, offered periodically) Provides an opportunity to develop a radio theater show from script through broadcast performance. Parts are assigned through audition. Involves significant research and rehearsal time in various capacities for all students enrolled. [Note: students will audition/ interview to be on radio]

TH 2231. Playwriting. 
(ART/P; 4.0 cr.; fall, spring, offered periodically) Introduces the process for writing and revising an original play. Focus is on writing, revising, and presenting a short play, including idea generation, invention, drafting, and peer response.

TH 2301. Stagecraft. 
(ART/P; 4.0 cr.; spring, every year) Development of stagecraft from the Greeks to the present. Basic forms of stage scenery and their functions in the theatre. Tools, materials, and techniques employed in creating the visual environment of the stage. (3 hrs lect, 3 hrs practicum)

TH 2993. Directed Study. 
(1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

TH 3001. Theatre Scene Painting Studio. 
(FA; 4.0 cr.; prereq #; fall, odd years) Instruction in a systematic approach to painting theatrical scenery. Traditional techniques and the tools and paints that have been developed to support those techniques.

TH 3003. Stage Management. 
(ART/P; 4.0 cr.; prereq #; fall, spring, offered periodically) Introduces the principles of theatrical stage management; explores the stage manager's functions and duties through all phases of the production process including pre-production, rehearsal, and performance.

TH 3101. World Theatre: History and Literature I. 
(FA; 4.0 cr.; fall, every year) Theatrical practice and dramatic literature from origins through late 17th century, tracing the roots leading to, and influences on, early modern European theatre practice and dramatic literature, as well as examining select Asian, African, and/or pre-Columbian American theatrical practice.

TH 3102. World Theatre: History and Literature II. 
(FA; 4.0 cr.; spring, every year) Theatrical practice and dramatic literature from the late 17th century to the present, examining select Asian, African, and/or Western Hemisphere theatrical practice, as well as tracing the roots leading to, and influences on, current world theatre practice and dramatic literature.

TH 3201. Advanced Acting. 
(ART/P; 4.0 cr.; prereq 1101, 1111, 2101; fall, spring, offered periodically) Begins with advanced acting techniques based in psychological realism and moves to an exploration of select classical and non-realistic forms. Styles to be examined are chosen from a list, including ancient Greek, Elizabethan, comedy of manners, absurdism, postmodernism, musical theatre, etc.

TH 3202. Advanced Directing. 
(ART/P; 4.0 cr.; prereq 1101, 1111, 2101; fall, spring, offered periodically) Begins with advanced directing techniques based in psychological realism and moves to an exploration of select classical and non-realistic forms. Styles to be examined are chosen from a list, including ancient Greek, Elizabethan, comedy of manners, absurdism, postmodernism, musical theatre, etc.

TH 3301. Stage Lighting. 
(ART/P; 4.0 cr.; prereq 1301, 2301; fall, even years) History and development of lighting for the stage. Theory and concepts of lighting as a visual art and its function in the theatre. Lighting design as a creative process and practical solution of lighting design problems. Lighting equipment and its use.

TH 3302. Stage Costuming. 
(FA; 4.0 cr.; prereq 1301, 2301; fall, odd years) History and development of stage costume. Theory and concepts of stage costuming as a visual art and its function in the theatre. Costume design as a creative process. Practical demonstrations of knowledge of design, history, and functions of stage costume.

(ART/P; 4.0 cr.; fall, offered periodically) Theory, concepts, and practice of using a computer as a drawing and drafting tool.

TH 3304. Art Direction for Film and Television. 
(FA; 4.0 cr.; fall, spring, offered periodically) Introduction of art direction for film and television. The roles and duties of the production designer and art director for fictional film and television series.

TH 3305. Stage Make-Up. 
(ART/P; 4.0 cr.; fall, spring, offered periodically) Systematic approach to stage make-up application. Includes history, safety, product, design, and application, with heavy emphasis on hands-on experience.

TH 3306. Advanced Lighting and Sound Design. 
(ART/P; 4.0 cr.; prereq 1301 or 3301 or #; fall, spring, offered periodically) Advanced study in the application of design theory as it relates to lighting and sound for theatre. Particular emphasis on use of relevant technologies in the design process.

TH 3450. Irish Drama: Print, Culture, and Performance. 
(IP: 4.0 cr.; [max 8.0 cr.]; summer, offered periodically) Includes theatre performances and tours, workshops, and seminars from leading Irish scholars and actors; class sessions; cultural visits and exploration of Irish cities, landscapes, and historical sites throughout Ireland. [Note: some course readings expected before departure]

TH 3993. Directed Study. 
(1.0-5.0 cr.; max 10.0 cr.); fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.

TH 4301. Scenic Design. 
(FA; 4.0 cr.; prereq 1301, 2301; fall, odd years) Designing scenery as an expressive environment for the theatre. Elements and functions of design and principles of composition. Problems in coordination and execution of design in the interpretation of dramatic literature using a variety of staging techniques. Study of various styles of historical and contemporary stage productions and theatre architecture through the writings and designs of such artists and theorists as Appia, Craig, Meyerhold, Jones, and Svoboda.

TH 4901. Senior Project. 
(2.0-4.0 cr.; prereq theatre arts major, #; fall, spring, every year) Culminating activity to demonstrate the student's competence in some area of theatre arts. Projects may be completed independently (e.g., a research paper, a solo acting performance) or as part of a group effort. Acting, scenery, lighting, costume design, playwriting, and theatre history are some areas in which the project may be undertaken.

TH 4993. Directed Study. 
(1.0-5.0 cr. [max 10.0 cr.]; fall, spring, every year) An on- or off-campus learning experience individually arranged between a student and a faculty member for academic credit in areas not covered in the regular curriculum.