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Course Descriptions


Geog 1403V. Honors: Biogeography of the Global Garden. (4 cr. Prereq–Honors) Geography of biodiversity/productivity, from conspicuous species to those that cause human disease, economic hardship. Roles played by extinction, extinction, energy, water, biochemicals, dispersed. Experiments demonstrating interactions of managed/unmanaged biotic with hydrologic cycle, energy budgets, nutrient cycles, carbon budget, soil processes. (4 cr)

Geog 1403W. Biogeography of the Global Garden. (3 cr) The geography of biodiversity and productivity, from conspicuous species to those that cause human disease and economic hardship. The roles played by evolution and extinction, extinction of energy, water, biochemicals, dispersal. Experiments demonstrating interactions of managed/unmanaged biotic with hydrologic cycle, energy budgets, nutrient cycles, carbon budget, soil processes. (3 cr)


Geog 1462W. Introduction to Meteorology Laboratory. (2 cr) Offered in conjunction with 1425. Weather observation, meteorological instrumentation. Statistical analysis of weather observations, climatological data. Map analysis, weather forecasting. (2 cr)

Geog 1502. Maps, Visualization and Geographical Reasoning. (4 cr) Fundamental issues related to the acquisition, storage, manipulation, analysis, display and interpretation of spatially-referenced data. Emphasis on mathematical analysis of these data and interpretation of cultural and physical patterns critical to the development of geographical reasoning. (4 cr)

Geog 1506W. Freshman Seminar. (3 cr; A-F only) Topics specified in Class Schedule. (3 cr)

Geog 1906W. Freshman Seminar. (3 cr; A-F only) Topics specified in Class Schedule. (3 cr)

Geog 1973W. Geography of the Twin Cities. (3 cr) Social and physical characteristics of the Twin Cities. Their place in the urban network of the United States. (3 cr)

Geog 3001. Geographic Inquiry and Human Development. (3 cr) Principles of geographic inquiry applied to understanding development. Climatic formation; vegetation, soils; natural conditions; cultural systems; production systems; demographic change; settlement and communications systems; cultural diffusion; political systems, nations, geopolitics; flows of goods, people, money, contrasting development visions; development inequalities. (3 cr)


Geog 3101. Geography of the United States and Canada. (4 cr. §3102) Analysis of the ways in which the aspirations and abilities of diverse groups of people interact with the complexities of the natural environment to produce the contemporary pluralistic cultures and regional differentiation of the United States and Canada. (4 cr)

Geog 3102. Geography of the United States and Canada. (3 cr. §3101) Analysis of ethical dilemmas and policy issues that arise as a result of the diverse ways in which different groups of people interact with the complexities of the natural environment in various regions of the United States and Canada. (3 cr)

Geog 3111. Geography of Minnesota. (3 cr) The evolution of Minnesota and its current geographical characteristics. The state is a unique political entity that possesses similarities with other states because of the homogenizing influence of the federal government. (3 cr)

Geog 3141. Africa. (3 cr) Regional differentiation of human groups and environments; culture contact and problems of underdeveloped countries south of the Sahara. (3 cr)


Geog 3161W. Europe: A Geographic Perspective. (3-4 cr) Comparative analysis and explanation of Europe’s physical, demographic, ethnic/cultural, economic, political, and urban landscapes; European integration - the European Union; transformation of Eastern Europe. German language discussion group in conjunction with the course for 1 extra credit. (3-4 cr)
Geog 3376. Political Ecology of North America. (3 cr. Prereq—Soph or jr or sr) Social production of nature in North America related to questions of social/environmental justice. Economic, political, cultural, ecological relations that shape specific urban/rural environments, social movements that have arisen in response to environmental change. Importance of culture/identity in struggles over resources/environments.

Geog 3378. Third World Underdevelopment and Modernization. (3 cr) Processes underlying socioeconomic change in the Third World. Examine global economy and internal spatial and socioeconomic conditions. Theories of modernization, development, and underdevelopment.

Geog 3379. Environment and Development in the Third World. (3 cr; A-F only, Prereq—Soph or jr or sr) Basic concepts for analyzing relations between capitalist development and environment in Third World. Analytical concepts about historical geography of capitalist development, geographically historically specific case studies, likelihood of social/environmental sustainability.

Geog 3381W. Population in an Interacting World. (4 cr) Comparative analysis and explanation of trends in fertility, mortality, internal and international migration in different parts of the world; world population problems; population policies; theories of population growth; impact of population growth on food supply and the environment.

Geog 3401V. Honors: Geography of Environmental Systems. (4 cr; A-F only, Prereq—Honors) Geographic patterns, dynamics. Interactions of atmospheric, hydrographic, geomorphic, pedologic, biologic systems as context for human population, development, resource use patterns.

Geog 3401W. Geography of Environmental Systems. (4 cr; A-F only) Examination of geographic patterns, dynamics, and interactions of atmospheric, hydrographic, geomorphic, pedologic, and biologic systems as the context for human population, development, and resource use patterns.

Geog 3411W. Geography of Health and Health Care. (3 cr; §5411) Application of human ecology, spatial analysis, political economy, and other geographical approaches to analyze problems of health and health care. Includes issues in mobile distribution and diffusion of disease; impact of environmental, demographic, and social change on health; distribution, accessibility, and utilization of health practitioners and facilities.

Geog 3431. Plant and Animal Geography. (3 cr; §5431) Introduction to biogeography. Focuses on patterns of plant/animal distributions at different scales over time/space. Evolutionary, ecological, and applied biogeography. Paleobiogeography, vegetation-environment relationships, vegetation dynamics/disturbance ecology, human impact on plants/animals, nature conservation. Discussions, group/individual projects, local field trips.

Geog 3441. Quaternary Landscape Evolution. (3 cr; A-F only, Prereq—1403 or 3401 or #) Roles of climate change, geomorphic history, vegetation change, and soil development in evolution of landscape patterns during Quaternary Period. Emphasizes North America.

Geog 3511. Principles of Cartography. (4 cr. Prereq—3 cr in geog or #) History and development of U.S. academic cartography, coordinate systems and map projections, data classification and map generalization, methods of thematic symbolization, and cartographic design. A series of computer-based lab exercises will apply conceptual lecture material to the creation of thematic maps.

Geog 3531. Numerical Spatial Analysis. (4 cr) Introduction to theoretical and applied aspects of geographical quantitative methods with a focus on spatial analysis. Emphasis placed on the analysis of geographical data for spatial problem solving in both the human and physical areas of the discipline.

Geog 3561. Principles of Geographic Information Science. (4 cr; Prereq—3 cr or sr) Introduction to study of geographic information systems (GIS) geography and non-geography students. Topics include GIS application domains, data models and sources, analysis methods and output techniques. Lectures, readings and hands-on experience with GIS software.

Geog 3561H. Honors: Principles of Geographic Information Science. (4 cr; Prereq—Honors, Jr or sr or #) Introduction to study of geographic information systems (GIS). GIS application domains, data models/sources, analysis methods, output techniques. Lectures, readings, hands-on experience with GIS software.

Geog 3605V. Honors: Geographical Perspectives on Planning. (4 cr; §3605V, §5605) Role of planning in reshaping 19th-20th-century cities in Europe, North America, selected Third World countries. History of Planning. Societal change, interest groups, power relations in planning process. Citizen participation/practice in planning. Meets with 3605W. Includes additional weekly seminar-style meeting, bibliography project on a topic selected in consultation with instructor.


Geog 3671. Contemporary Chinese Society: Mainland China, Hong Kong, Taiwan. (3 cr; A-F only. §EAS 3482, §601, §3671. Prereq—1301 or Soc 1001 or equiv in other social sciences or humanities or #) With a focus on post-1949 mainland China, Taiwan, and Hong Kong, students will be introduced to the Chinese family, dating and marriage, rural and urban societies, population, work and occupation, socioeconomic development and inequalities, and impacts of post-1978 reforms.

Geog 3900. Topics in Geography. (3 cr (max 9 cr)) Special topics/regions covered by visiting professors in their research fields.

Geog 3973W. Geography of the Twin Cities. (3 cr; §1973) Social/physical characteristics of Twin Cities. Their place in U.S. urban network.

Geog 3985V. Honors Senior Project Seminar. (4 cr. Prereq—Honors) Completion of research/writing of senior project.

Geog 3985W. Senior Project Seminar. (4 cr. Prereq—Jr or sr or #) Complete the research/writing of senior project.


Individual guided research.

Geog 4001. Modes of Geographic Inquiry. (4 cr) Examination of competing approaches to the study of geography. Environmental determinism, regional tradition, scientific revolution, behavioral geography; modeling and quantitative geography; radical geography; interpretive and qualitative approaches; feminist and postmodern geography; ecological thinking and complexity; geographic ethics.

Geog 4002W. Social Theory and the Environment. (3 cr Prereq—Jr or sr or #) How human-nature relations are understood from perspective of social theory. Contemporary debates within human sciences. Interdisciplinary, reading-intensive.

Geog 4121W. Latin America. (3 cr) Interplay of natural environment and history in shaping contemporary Latin America. Political ecology of natural resources, food supply and distribution, urbanization, regional economy, migration, ethnicity, and the role of the state and international agencies in domestic economies.

Geog 4382. Contemporary Immigrant America. (3-5 cr) Analysis and explanation of contemporary immigration trends; immigrant policies; immigrant rights; immigrant integration and adaptation; ethnic group formation; ethnic identities; ethnic neighborhoods and communities; second generation; immigrant women; ethnic conflict; xenophobic reactions. Community Service Learning component for 2 extra credits.

Geog 5143. Geography of West Africa. (3 cr) West Africa from Senegal to Cameroon; social geography of resource use, population, settlement, economic development, and international relations.

Geog 5145. Development in Africa. (3 cr; §5145) Economic, political, and social development in Africa from independence to the present. Emphasis on reordering colonial landscapes, bases for North-South relations, big power intervention, and participation in the world economy.


Geog 5211. East Asia. (3 cr; §5211, §5ES 3211) Open to graduate students in East Asian studies and other disciplines who wish to study the region from a geographical perspective. Research paper. Meets with 3211.

Geog 5215. Geography of China. (3 cr; §5215) Open to graduate students in East Asian studies and other disciplines who wish to study the region from a geographical perspective. Research paper. Meets with 3215.


Geog 5371W. American Cities I: Population and Housing. (4 cr; §PA 5201) Emergence of North American cities; residential building cycles, density patterns; metropolitan housing stocks, supply of housing services; population and household types; neighborhood-level patterns of housing use; housing prices, intraurban migration; housing submarkets inside metro areas; emphasis on linking theory, method, case studies.

U.S.-Canadian contrasts.

Geog 5374W. The City in Film. (4 cr. §5374.) Prereq—Grad student or #) Cinematic portrayal of changes in 20th-century cities worldwide. Social/cultural conflict, political/ economic processes, changing gender relationships, rural versus urban areas, population/development issues (especially as they affect women/children). Meets concurrently with 5374. Additional weekly meeting discusses films, readings. Project on a topic selected in consultation with instructor.

Geog 5385. Globalization and Development: Political Economy. (4 cr. Prereq—5r or grad or #) Nature/scope of modern world system (capitalism), its impact on regional development processes. Roles of state and of international financial institutions.

Geog 5393. The Rural Landscape. (4 cr) Analysis of the three principal components of the rural landscape (the form of the land surface, the plant life that cloaks it, and the structures that people have placed upon it). Emphasis on structures associated with agriculture including some discussion on mining, forestry, resort areas, and small towns.

Geog 5411W. Geography of Health and Health Care. (3 cr §3431) Application of human ecology, spatial analysis, political economy, and other geographical approaches to analyze problems of health and health care. Topics include distribution and diffusion of disease; impacts on environmental, demographic, and social change on health; distribution, accessibility, and utilization of health practitioners and facilities.

Geog 5421. Introduction to Atmospheric Science. (3 cr §5520 5401. Prereq—Familiarity with fundamentals of physics, calculus, and statistics, including differential and integral calculus and basic differential equations and basic thermodynamics, mechanics, and the electromagnetic spectrum) Calculus-based introduction to atmospheric dynamics, radiation, thermodynamics, chemical composition, and cloud processes. Applications to climate, meteorology, the hydrologic cycle, air quality, and biochemical cycles.

Geog 5423. Climate Models and Modeling. (3 cr. Prereq—3401 or #) Survey of development and research with simple and complex (three-dimensional) climate models. Environmental processes and their numerical representation; models; evaluation of model sensitivity and accuracy; coupling between atmosphere, biosphere, hydrosphere, and cryosphere; assessment of model predictions for climate change.

Geog 5426. Climatic Variations. (3 cr. Prereq—1425 or 3401 or #) Theories of climatic fluctuations and change at decadal to centuries time scales; analysis of temporal and spatial fluctuations especially during the period of instrumental record.

Geog 5431. Plant and Animal Geography. (3 cr §5431) Introduction to biogeography. Focuses on patterns of plant/animal distributions at different scales over time/space. Evolutionary, ecological, and applied biogeography. Paleobiogeography, vegetation-environment relationships, vegetation dynamics/disturbance ecology, human impact on plants/animals, nature conservation. Discussions, group/individual projects, local field trips.

Geog 5441. Quaternary Landscape Evolution. (3 cr. Prereq—3401 or grad student or #) Roles of climate change, tectonic, glacial, eustatic, and biological history, vegetation change, and soil development in the evolution of landscape patterns during the Quaternary Period, with emphasis on North America.

Geog 5444. Water Resources, Individuals and Institutions. (3 cr §5488. Prereq—3511 or 3401 or grad or #) How water resources are controlled by natural system functions, user actions, and the influence of social and political institutions. Explore how these three levels of control vary in space and time, paying particular attention to the complexities of each of these controls and the feedbacks among them.

Geog 5511. Advanced Cartography. (3 cr. Prereq—3511 or #) Advanced topics on data sources for mapping; history of thematic cartography (focused on 19th-century European activity); multivariate classification and symbolization; models for cartography, cartographic design, spatial interpolation, and surface representation; principles of animated and multimedia cartography.

Geog 5512. Cartography: Topics. (3 cr. Prereq—3511 or 3513 or #) Selected topics include the system of cartographic communication, map design, map reading, map analysis, history of cartography.

Geog 5530. Cartography Internship. (2-7 cr [max 5 cr]) Provides intensive hands-on experience in contemporary map production and design, ranging from GIS applications to digital prepress. Strong computer skills essential.


Geog 5561. Principles of Geographic Information Science. (4 cr. Prereq—Grad) Introduction to the study of geographic information systems (GIS) for geographical and non-geography students. Topics include GIS application domains, data models and sources, analysis methods and output techniques. Lectures, reading, and hands-on experience with GIS software. Strong computer skills essential.

Geog 5562. Geographic Information Science and Analytical Cartography. (3 cr. Prereq—3561 or 5561 and 3511; or #) Topics include algorithms and data structures for digital cartographic data, topological relationships, surface modeling and interpolation, map projections and geometric transformations, numerical generalization, and raster and vector processing. Hands-on experience using a variety of software packages.

Geog 5563. Advanced Geographic Information Science. (3 cr. Prereq—8 or better in 3561 or 5561 or #) Advanced study of geographic information systems (GIS). Topics include spatial data models, topology, data encoding, data quality, database management, spatial analysis tools and visualization techniques. Hands-on experience using an advanced vector GIS package.

Geog 5564. Urban Geographic Information Science and Analysis. (3 cr. Prereq—3561 or 5561) Core concepts in urban geographic information science including sources for urban geographical and attribute data (including census data), urban data structures (focusing on the TIGER data structure), urban spatial analyses (including location-allocation models), geodemographic analysis, network analysis, and the display of urban data.

Geog 5565. Geographical Analysis of Environmental Systems and Global Change. (3 cr. Prereq—3561 or 5561 or FR 4131 or LA 5573 or one intro GIS course or grad or #) Applications of geographic information systems and other spatial analysis tools to the analysis of environmental systems patterns, dynamics, and interactions. Focus on global to landscapes developed to analyze atmospheric, hydrologic, geographic, pedologic, biologic, and human land use systems.

Geog 5588. Multimedia Cartography. (3 cr) Prereq—Minimum of three geog courses, including one cartography course or advanced standing in an allied field such as landscape architecture or #) Conceptualized geographic information in an animatable form, selecting appropriate animation metaphors for specific ideas, using standard graphic software to prepare images for computer display and animation.

Geog 5605V. Honors: Geographical Perspectives on Planning. (4 cr §5605W. Prereq—Honors or grad student) Role of planning in reshaping 19th-/20th-century cities in Europe, North America, selected Third World countries. History of planning. Societal change, interest groups, power relations in planning process. Citizen participation/practice in planning. Meets with 3605. Includes additional weekly seminar-style meeting, bibliography project on topic selected in consultation with instructor.

Geog 5605W. Geographical Perspectives on Planning. (4 cr §5605) Open to graduate students and undergraduates wishing Honors credits. Includes one additional weekly seminar-style meeting and a bibliography project on a topic selected in consultation with the instructor. Meets with 3605.

Geog 5701. Field Research. (3 cr. Prereq—9 cr in geog, #) Field investigation in physical, cultural, and economic geography: techniques of analysis and presentation; reconstruction of environments.

Geog 5724. Meanings of Place. (3 cr. A-F only §5724. Prereq—5r or grad) Analysis of the messages and meanings of our natural and built surroundings. Considers place-based responses to urban and rural settings based on aesthetic, historic, social, personal, and design perspectives. Uses extensive project and field work components and involves significant writing.

Geog 5775. Geographic Education. (3 cr. Prereq—Three courses in geography or history or social sciences or education or #) Teaching geography from middle school up; pedagogical use of geographical themes; methods for effective teaching of multiple cognitive domains—facts, theories, analytical skills, and evaluations; designing audio-visual aids, independent projects, simulations, etc. to meet National Standards in geography.

Geog 5900. Topics in Geography. (3 cr [max 9 cr]) Special topics and regions. Course offered by visiting professors in their research fields.

Geological Engineering (GeoE)

Department of Civil Engineering
Institute of Technology

GeoE 3111. How to Model It: Building Models to Solve Engineering Problems. (3 cr) Problem formulation design and construction of models, and drawing conclusions from modeling results. Students learn how to use computer-based modeling tools working in small groups on a number of problems from various engineering contexts.


GeoE 4102W. Capstone Design. (3 cr; A-F only. Prereq—CE, GeoE, or Geo upper division or graduate student or #) Team participation in formulation and solution of open-ended civil engineering problems from conceptual stage through preliminary planning.
GeoE 4111. Engineering Systems Analysis. (3 cr. Prereq–Upper division IT) Systems Analysis focuses on a broader “systems” approach of viewing problems. The techniques of operations research—decision engineering, network analysis, and linear programming—and expert systems—are used to represent systems, and especially to assess trade-offs.

GeoE 4121. Computer Applications in Civil Engineering II. (3 cr. A-F only. Prereq–CE or GeoE upper div, 3107, Math 2245, Math 2263) Advanced application of computer tools and methods in solving partial differential equations resulting from the analysis of civil engineering problems. The major tools used will be Spreadsheet and Visual Basic programming. Methods covered could include: finite differences, boundary element, finite element and control volume finite element.


GeoE 4311. Rock Mechanics II. (3 cr; A-F only. Prereq–Upper division or grad student in IT,3311, CE 3311, or #) Failure mechanisms of rock masses. Elasto-plastic solutions applied to underground excavations. Design of linings and support systems; rock-support interaction. In situ stresses and excavation shape. Instrumentation and monitoring.

GeoE 4341. Engineering Geostatistics. (3 cr; A-F only. Prereq–GeoE, CE or GEO upper division or grad student, Stat 3202 or #) Problem solving and decision making in civil and geological engineering using applied statistics. Emphasis on spatially correlated data, e.g., geologic site characterization, and spatial sampling design.


GeoE 4352. Groundwater Modeling. (3 cr; A-F only. Prereq–upper division or grad student in IT,4351, CE 4351, or #) Principle of analytic element method. Mathematical and computer modeling of single and multiple aquifer systems. Application to actual field problems. Theory and application of contaminant transport models, including capture zone analysis.

GeoE 5311. Experimental Geomechanics. (3 cr; A-F only. Prereq–IT upper division or grad student; 4301, CE 4301, or #) Machine stiffness; closed-loop testing. Small-strain theory. Measurement of deformation; strain gages, LVDTs, accelerometers, and associated circuits. Direct and indirect testing. Material behavior: experiments on anisotropic, damaged, and fluid-filled solids.

GeoE 5321. Geomechanics. (3 cr; A-F only. Prereq–IT upper division or grad student; 4301, CE 4301 or #) Review of elasticity theory and solution of some elastic boundary value problems relevant to geomechanics. Wave propagation in unbounded elastic media. Elements of fracture mechanics and applications. Elements of poroelasticity and applications.

GeoE 5331. Geomechanics Modeling. (3 cr; A-F only. Prereq–IT upper division or grad student; 4301 or CE 4301) Soil and rock response in triaxial testing; drained and undrained behavior; elastic and plastic properties. Modeling stresses, strains, and failure in geomechanics problems.

GeoE 5431. Wave Methods for Nondestructive Testing. (4 cr; A-F only.) JCE 5431. Prereq–AEM 2021, AEM 3031 or #) Introduction to contemporary methods for nondestructive characterization of objects of civil infrastructure (e.g., highways, bridges, geotechnical sites). Imaging technologies based on propagation of elastic waves: ultrasonic and resonant frequency methods, seismic surveys, acoustic emission monitoring. Lecture, lab.

Geology and Geophysics (Geo)

Department of Geology and Geophysics

Institute of Technology


Geo 1003. Dinosaur Evolution, Ecology, and Extinction: Introduction to the Mesozoic World. (3 cr) Dinosaurs and the Mesozoic Earth are used to introduce evolution, plate tectonics, climate change, and Earth systems. Overview of the history of dinosaur interpretations illustrates the principles and social aspects of scientific investigation.


Geo 1006. Oceanography. (4 cr) How various processes in the ocean interact. Marine biology, waves, tides, chemical oceanography, marine geology, and human interaction with the sea. Labs include study of live marine invertebrates, manipulation of oceanographic data, and discussion using videos showing unique aspects of ocean research.

Geo 1011. Volcanoes of the Earth. (4 cr) Nonmathematical introduction to volcanoes, their origin and distribution on Earth and through time; theory of plate tectonics, origin of magmas and the Earth’s interior; products of volcanoes, types of eruptions and hazards, and impact on climate, vegetation, and society.


Geo 1081. Conspiracies, Fraud, and Deception in Earth History. (1 cr) Famous cases of geological deception from three centuries are presented in the intellectual context of their time and demonstrate the prevailing power of scientific reasoning.

Geo 1101. Introduction to Geology. (3 cr; §1001) Physical processes that shape the Earth: volcanoes, earthquakes, plate tectonics, glaciers, rivers. Current environmental issues and global change. Lecture.

Geo 1102. Introduction to Earth History. (3 cr; §1002) Evolution of life on Earth. Interrelationships of plate tectonism, climate change, and organic evolution that led to the present ecosystem. Impacts of hominid evolution on Earth systems and of geological processes on human society.

Geo 1901. Freshman Seminar: Environment. (1-3 cr; # max 6 cr; A-F only. Prereq–Fr with no more than 24 cr) Topics vary. See Class Schedule.

Geo 1904. Freshman Seminar: International Perspective. (1-3 cr; max 6 cr; A-F only. Prereq–Fr with no more than 24 cr) Topics vary. See Class Schedule.

Geo 1905. Freshman Seminar. (1-3 cr; A-F only. Topics vary. See Class Schedule.

Geo 1906W. Freshman Seminar: Writing Intensive and Environmental Theme. (1-3 cr; A-F only. Prereq–Fr with fewer than 24 cr after matriculation) Topics vary: see freshman seminar topics.

Geo 1909W. Freshman Seminar: Writing Intensive and IP Theme. (1-3 cr; A-F only. Prereq–Fr with fewer than 24 cr after matriculation) Topics vary: see freshman seminar topics.

Geo 1910W. Freshman Seminar: Writing Intensive. (1-3 cr; A-F only. Prereq–Fr with fewer than 24 cr after matriculation) Topics vary: see freshman seminar topics.

Geo 2111H. Honors: Earth Science. (4 cr; A-F only, $1001. Prereq–IT Honors Curr or IT Honors Office consent) Application of physics and chemistry to the structure and dynamics of the Earth.

Geo 2201. Geodynamics I: The Solid Earth. (3 cr. Prereq–PhyS 1301 or #) Dynamics of solid Earth, particularly tectonic system. Seismology, internal structure of Earth. Earth’s gravity, magnetic fields. Paleomagnetism, global plate tectonics, tectonic systems. Field trip.

Geo 2301. Mineralogy. (3 cr. Prereq.–Chem 1021, Math 1271 or #) Crystallography, crystal chemistry, physics. Physical/chemical properties, crystal structures, chemical equilibria of major mineral groups. Lab includes crystallographic, polarizing microscope, X-ray powder diffraction exercises, hand-specimen mineral identification.

Geo 2302. Petrology. (3 cr. Prereq.–2301 or #) Magnatic and metamorphic processes, with an emphasis on plate tectonic interpretation of rock sequences.


Geo 3002. Climate Change and Human History. (3 cr) Causes of long-/short-term climate change. Frequency/magnitude of past climate changes; their geologic records. Relationship of past climate changes to development of agrarian societies and to shifts in power among kingdoms/city-states. Emphasizes last 10,000 years.

Geo 3003. Geohazards. (3 cr) Geologic hazards associated with earthquakes/volcanoes. How society confronts dangers posed by
Course Descriptions

Geo 3093. Problems in Geology and Geophysics: Junior. [1-4 cr; max 6 cr. Prereq—#] Geologic or geophysical problems studied independently under the direction of a faculty member.

Geo 3202. Geodynamics II: The Fluid Earth. (3 cr; Prereq—4221) Dynamics of fluid Earth, mainly surface processes and convection.


Geo 3870. Modeling Workshop. (1 cr; max 2 cr. Prereq—Geo or Geoph major or #) Modeling of geologic or geophysical systems.

Geo 3880. Laboratory Workshop. (1 cr; max 2 cr. Prereq—Geo or Geoph major or GeoEng major or #) Geologic or geophysical lab study.

Geo 3890. Field Workshop. (1 cr; max 2 cr. Prereq—Geo or Geoph major or GeoEng major or #) Geologic or geophysical field study.

Geo 3911. Introductory Field Geology. (4 cr; A-F only. Prereq—#) Geologic mapping on topographic maps and aerial photos; field identification of igneous, sedimentary and metamorphic rocks; measurement of stratigraphic sections; study of structural and geomorphic features.

Geo 4010. Undergraduate Seminar: Current Topics in Geology and Geophysics. (1-4 cr; max 12 cr. Prereq—#) Topics in geology and geophysics investigated in a seminar format.

Geo 4093. Problems in Geology and Geophysics: Senior. [1-4 cr; max 6 cr. Prereq—#] Nonstructured research course enabling seniors to engage in independent research under faculty supervision.

Geo 4094. Senior Thesis. (2 cr; max 4 cr. Prereq—#) Geol or GeoPhys major, #) Nonstructured research course enabling senior-level majors to engage in independent research under faculty supervision. Select problems according to individual interests and in consultation with faculty committee. Thesis and oral defense.

Geo 4203. Principles of Geophysical Exploration. (3 cr; Prereq—Phys 1302) Seismic exploration (reflection and refraction); potential techniques (gravity and magnetics) and electrical techniques of geophysical exploration.

Geo 4204. Geomagnetism and Paleomagnetism. (3 cr; Prereq—2201, Phys 1302, Math 1272 or #) Present geomagnetic field at the Earth’s surface, secular variation, geomagnetic field reversals. Physical and chemical basis of paleomagnetism: origin of natural remanent magnetization, mineralogy of magnetic minerals, magnetic polarity stratigraphy, secular variation, polar wander, and environmental magnetism.

Geo 4211. Solid Earth Geophysics I. (3 cr; A-F only. Prereq—2201, Phys 1302) Basic elasticity, basic seismology, and physical structure of the Earth’s crust and deep interior.

Geo 4212. Solid Earth Geophysics II. (3 cr; A-F only. Prereq—2201, Phys 1302) Dynamics of the solid Earth, mostly mantle and core; seismic tomography, geothermal measurements, gravity, time-dependent deformation of the Earth, computer modeling.

Geo 4221. Application of Magnetism in the Natural Sciences and Engineering. (2 cr; Phys 4221; Prereq—Phys 1302) Multidisciplinary application of magnetism and magnetic phenomena. Survey for nonspecialists covers fundamental principles of magnetism and how this ubiquitous phenomenon is used in a variety of science and engineering disciplines. Physics of magnetism, rock magnetism, biomagnetism, magnetic sensors, and magnetic recording.

Geo 4301. Igneous and Metamorphic Petrology. (4 cr; Prereq—Math 2243 or #) Theoretical course that develops basic thermodynamic tools and chromatic analysis for interpretation of chemical processes in igneous and metamorphic rocks. Lab, field trip, and problem sets.

Geo 4501. Structural Geology. (3 cr; Prereq—2201, 2302) Fundamental concepts related to deformation of Earth’s crust. Processes associated with deformation, faulting, folding, fabric development. Lab/lecture include solving problems, conducting physical/numerical experiments. Field trips.

Geo 4502. Tectonic Styles. (3 cr; Prereq—4501 or #) Origin and nature of major types of tectonic disturbances affecting the crust and lithosphere, including analysis of the form and development of individual structural components and relationships to plate tectonics. Changes over geologic time in the nature of orogenic processes.

Geo 4503. Neotectonics. (4 cr; Prereq—4501 or #) Integration of diverse elements of geology, geodesy, and geophysics to examine recent and active tectonics of the Earth’s lithosphere: extensional, compressional and wrench tectonic regimes with case studies around the world; modern global plate motions, geotectonic techniques, seismic anisotropy, climatically driven tectonics.

Geo 4601. Limnology. (3 cr; A-F only. Prereq—#EEB 4601, Chem 1022 or #) Description and analysis of lakes and other aquatic environments, beginning with lake origins and progressing through lake physics, chemistry, and biology. Interrelationships among these topics and effects of human activities.

Geo 4602. Sedimentology and Stratigraphy. (3 cr; Prereq—2302, 3202) Interpretation of origin of sedimentary rocks through application of basic physical/chemical principles. Modern depositional environments, petrographic microscopy, basin dynamics, stratigraphy.

Geo 4605. Limnology Laboratory. (1 cr; A-F only. Prereq—#EEB 4605, Prereq—4601 or #EEB 4601 or #) Field and lab methods used to obtain information about environmental conditions in aquatic environments and to measure the abundance of aquatic organisms, especially plankton. Field and lab instruments, sampling devices, microscopy, water chemistry, and data analysis.

Geo 463 W. Ed. Systems: Geosphere/Biosphere Interactions. (3 cr; Prereq—3401) Interdisciplinary study of global-change forcing mechanisms, feedbacks, dynamics on various time scales, using paleorecord to illustrate processes.

Geo 4701. Geomorphology. (3-4 cr; Prereq—1001, Math 1031 or #) Origin, development, and continuing evolution of landforms in various environments. Environmental implications. Weathering, slope and shore processes, fluvial erosion and deposition, arid region processes, glacial processes.

Geo 4703. Glacial Geology. (4 cr; Prereq—1001 or 1004 or #) Formation and characteristics of modern glaciers; erosional and depositional features of Pleistocene glaciers; history of quaternary environmental changes in glaciated and nonglaciated areas. Field trips and labs.

Geo 4911. Advanced Field Geology. (4 cr; A-F only. Prereq—3911, #) Geologic mapping; study of igneous, metamorphic, and sedimentary rocks; structural and surface features; problem solving. Paper required.


Geo 5002. Earth History for Teachers. (4 cr. Prereq—Ed degree) Evolution of life on Earth. Interrelationships of plate tectonics, climate change, and Earth systems. History of theories about dinosaurs illustrates principles and social aspects of scientific investigation. Required project designed to enhance ability to teach Earth history to K-12 students.

Geo 5003. Dinosaur Evolution for Teachers. (3 cr. Prereq—Ed degree) Dinosaurs and Mesozoic Earth used to introduce evolution, plate tectonics, climate change, and Earth systems. Required project designed to enhance ability to teach dinosaur evolution to K-12 students.

Geo 5006. Oceanography for Teachers. (3 cr. 51006, Prereq—Ed degree) How various processes in the ocean interact. Marine biology, waves, tides, chemical oceanography, marine geology, and human interaction with the sea. Labs include study of live marine invertebrates, manipulation of oceanographic data, and discussion using videos showing unique aspects of ocean research. Required design of modules for presenting course material to elementary or secondary school students.

Geo 5108. Principles of Environmental Geology. (3 cr; Prereq—Geology majors: core curriculum through 4501 or #:nonmajors: 1001 or #) Human impact on geological environment and effect of geology/geologic processes on human life from an ecosystem and biogeocycling perspective. Geologic limits to resources and carrying capacity of Earth. Land use planning, environmental impact assessment, ecogeologic world models. Field project and trip.

Geo 5201. Time-Series Analysis of Geological Phenomena. (3 cr; A-F only. Prereq—Math 2263 or #) Time-series analysis of linear and nonlinear geological and geophysical phenomena. Examples drawn from ice age cycles, earthquakes, climatic fluctuations, volcanic eruptions, climate change, and oceanographic phenomena, thermal convection and other time-dependent natural phenomena. Modern concepts of nonlinear dynamics and complexity theory applied to geological phenomena.

Geo 5202. Geological Thermomechanical Modeling. (3 cr; A-F only. Prereq—Math 2263 or #)
Concept of heat and mass transfer processes in Earth’s crust and mantle. Quantitative study of thermomechanical phenomena. Emphasis on analytical and modern numerical techniques.


Geo 5353. Electron Microprobe Theory and Practice. (2-3 cr. Prereq–2301, one yr chem and physics or #) Theory and practice of characterizing solid materials with electron beam instrumentation, including the reduction of X-ray data to chemical compositions.


Geo 5601. Advanced Sedimentology. (4 cr. Prereq–4602 or #) Modern techniques of sedimentary basin analysis focusing on interactions among the lithosphere, atmosphere, and biosphere. Sedimentary facies of modern and ancient systems, petrology of clastic and carbonate deposits, tectonic and paleoclimatic interpretations, paleocurrent analysis, diagenetic effects on subsurface fluid flow, and volcanic sedimentation.

Geo 5602. Depositional Mechanics. (3 cr. Prereq–4602, Math 2243 or #) Elementary mechanics of sediment transport applied to quantitative interpretation of sedimentary rocks.


Geo 5703. Regional Geomorphology. (2 cr. max 6 cr. Prereq–4501 or #) Geology of a particular region of the country, emphasizing its geomorphology. One-week field trip to the area is taken during Spring break. May be taken for credit more than once if regions are different.

Geo 5704. Glaciology. (3-4 cr. Prereq–Math 2263 or #) Theories of glacier flow. Internal structures and heat flow in glaciers and ice sheets. Geomorphic features produced by glaciers. Reading assignments and problems.

Geo 5705. Limnogeology and Paleoclimate. (3-4 cr. Prereq–1001, 4601 or #) Systems study of modern and ancient lakes of the world as archives of environmental history, as natural resources, as biogeochemical and physical process models, and as basins in geologic history. Includes many case studies. Many use aquatic signatures for interpreting paleoclimate.

Geo 5713. Tracers and Karst Hydrogeology. (3 cr. Prereq–5701, #) Karst hydrogeology and application of tracers to determine source, age, and mixing parameters of water in various karst systems. Physical and chemical principles and processes operating in karst hydrogeology; use of natural and synthetic chemical and isotopic labels or tracers to follow movement and mixing of water through hydrologic cycle.

Geo 5802. Scientific Visualization. (3 cr. Prereq–CSCE 1107 or CSCE 1113 or #) Visualization hardware and software, three-dimensional graphics, representation of scientific data, modeling, user interface techniques, output, commonly used algorithms, animation, case studies and examples.

German (Ger)

Department of German, Scandinavian, and Dutch

College of Liberal Arts

Ger 0222. Reading German. (0 cr; A-F only) Teaches only a reading knowledge of German. Enables graduate students to satisfy departmental requirements for an advanced degree. Intensive reading of German scholarly texts. Emphasizes reading, grammar, some listening, discipline-specific vocabulary.

Ger 1001. Beginning German. (5 cr) Emphasis on working toward novice-intermediate low proficiency in all four language modalities (listening, reading, speaking, writing). Topics include everyday subjects (shopping, directions, family, food, housing, etc.).

Ger 1002. Beginning German. (5 cr. Prereq–1001) Listening, reading, speaking, writing. Emphasizes proficiency. Topics include free-time activities, careers, and culture of German-speaking areas.


Ger 1020. Beginning German Conversation. (2 cr [max 8 cr. Prereq–1001 or equiv] Maintaining language skills through conversational practice. Emphasizes speaking skills, but also includes listening, reading, writing. Reviews essential grammatical structures.

Ger 1022. Beginning German Review. (5 cr. Prereq–Placement above 1001) Intended for students with previous experience in German, primarily those who have studied German in high school or at community colleges, or who are transfer students. Intensive review of all four language modalities (listening, reading, speaking, writing), with a proficiency emphasis to prepare for German 1003.

Ger 1024. Advanced Intermediate German. (5 cr. Prereq–1003 or satisfactory completion of Enrichment Proficiency Test with competency at the 1004 level) Intended for students who have not taken German 1004: Introduction to German Proficiency Test and need a review before taking it. Emphasis on developing intermediate-high proficiency in listening, reading, speaking, and writing. Contextualized work on grammar and vocabulary is supported by authentic readings and essay assignments.

Ger 1030. Intermediate German: Reading and Writing. (2 cr [max 8 cr. Prereq–1003 or equiv] Consolidating/developing reading/writing skills.

Ger 1909W. Freshman Seminar. (3 cr; A-F only) Topics specified in Class Schedule.

Ger 1910W. Freshman Seminar. (3 cr. Prereq–6 cr; A-F only) Topics specified in Class Schedule.

Ger 311W. Conversation and Composition. (4 cr. Prereq–Passing score on the Graduation Proficiency Test) Designed to help students achieve proficiency in professional or academic German. Attention is paid to the refinement of oral and written expression. A systematic review of the most important communicative modes of language and a wide range of topics are designed to keep students to the advanced level of proficiency.

Ger 312W. Conversation and Composition. (4 cr. Prereq–3011) Prepares students for upper-level language and content courses in German. Continues the same focus and approach as 3011 with the addition of a larger reading component.

Ger 3104. German Media. (3 cr. Prereq–3012) Introduction to German language media. Analysis of German language newspapers and magazine articles, the Internet, radio and television broadcasts. Close examination of the structure and style of journalistic prose.

Ger 3105. Professional German. (3 cr. Prereq–3012) Introduction to scholarly and professional German, specifically to the technical terminology and structures in social science articles and textbooks. Prepares students for the Foreign Language Immersion Program (FLIP).

Ger 3106. Techniques of Translation. (3 cr. Prereq–3012) Theory and practice of translation from and to German in a variety of genres. Idiomatics, stylistics, and cross-cultural aspects of translation will be highlighted.

Ger 3107. Advanced Communication Skills. (3 cr. Prereq–3012) Focuses on learning strategies for immersion students to process and understand academic language in texts and lectures in the FLIP courses.

Ger 3021. Business German. (3 cr. Prereq–3012 or equiv) Provides basic knowledge of German economic and business culture. Practicing language used in business field. Reading and discussion of German business documents, preparation of formal letters and reports.

Ger 3022. Advanced Business German. (3 cr. Prereq–Ger 3021 or equiv) Provides more intensive training in vocabulary and practices of German business in such areas as banking, trade, import/export, business management, marketing. Prepares students for the “International Test of Business German.”

Ger 3104WF. Reading and Analysis of German Literature. (4 cr. Prereq–3012) Introduction to literary analysis; readings from drama, prose, and lyric from the 18th century to the present.

Ger 3410. German Literature Before 1750. (3 cr. max 9 cr. Prereq–3104) Study of representative literary texts of the German High Middle Ages, Renaissance, Reformation, and the Baroque in cultural-historical context. Readings in modern German translation or English.

Ger 3421. 18th-Century German Literature. (3 cr. Prereq–3104) Investigation of German literature between 1720-1810, Enlightenment and Weimar Classicism in historical and cultural context. Reading and discussion of literary and philosophical works and aesthetic criticism.

Ger 3431. 19th-Century Literature. (3 cr. Prereq–3104)
Course Descriptions

Literary and cultural exploration of 19th-century German literature through an investigation of the literary movements of Romanticism, Realism, and Naturalism. Reading and discussion of literary and critical texts.

Ger 3441. 20th-Century Literature. (3 cr. Prereq-3104) German literature from 1890 to present in historical, political, social, and cultural context.

Ger 3460. Women Writers in German Literature. (3 cr. [max 9 cr. Prereq-3100]) A literary and historical investigation of selected German women writers from the theoretical perspectives of feminist theory, gender studies, and cultural studies/theory. Approaches may be thematic, generic, or chronological.

Ger 3490. Topics in German Literature. (3 cr [max 9 cr. Prereq-3104]) Intensive exploration of specific authors, literary genres, or other literary topics not covered in period courses.

Ger 3501. Contemporary Germany. (3 cr. Prereq-3102) Social, political, and cultural developments in Germany from 1945 to the present.

Ger 3510. Topics in German Studies. (3 cr. [max 9 cr. Prereq-3012]) One topic in depth dealing with the culture or civilization of German-speaking countries.

Ger 3511W. German Civilization and Culture: Middle Ages to 1700. (4 cr) Survey of representative cultural-historical events in Germany from early Germanic times to 1700.

Ger 3512W. German Civilization and Culture: 1700 to the Present. (4 cr) Survey of representative cultural-historical events in Germany from 1700 to the present.

Ger 3520. Topics in Austrian and Central European Culture. (3 cr [max 9 cr. Prereq-3102]) Culture, politics, and economy in Austria and Central Europe. Comparative analysis of cultural/political developments. Topics vary.

Ger 3531. Selected Writings in German Intellectual History. (3 cr. Prereq-3104) Philosophical writings on culture, history, and art. Authors include Lessing, Schiller, Kant, Hegel, Marx, Nietzsche, and Freud.

Ger 3592. Directed Studies: German-Speaking Countries. (4 cr [max 12 cr. Prereq-3102]) Preparation for research abroad during semester before departure. Written and oral reports upon return.

Ger 3601. German Medieval Literature. (3 cr. Prereq-No knowledge of German required) Literary investigation of the greatest works of medieval German poetry. Readings in English. Majors will be required to write a paper with use of secondary sources in English and German.

Ger 3604W. Introduction to German Cinema. (3 cr) An introduction to the study of German cinema, with a focus on the relation between German film and German history, literature, culture, and politics.

Ger 3610. German Literature in Translation. (3 cr [max 9 cr. Prereq-No knowledge of German required; cr toward major or minor requires reading in German] In-depth study of authors or topics from various periods in German literature.

Ger 3631. Jewish Writers and Rebels in German, Austrian, and American Culture. (3 cr. Prereq-No knowledge of German required; cr toward major or minor requires reading in German) Literary/cultural modes of writing used by Jewish writers in Germany, Austria, and America to deal with problems of identity, anti-Semitism, and assimilation. Focus on 20th century. All readings (novels, poetry, stories) in English.

Ger 3634A. German Women and Cultural History: Constructing Selves in Narrative Texts. (3 cr. Prereq-No knowledge of German required; cr toward major or minor requires reading in German) Examination of narrative texts by German women writers against a background of the cultural history of Germany during the 20th century. Focus on personal narrative texts, both written and pictorial, and readings in literary and cultural theory and history. All readings in English.

Ger 3641. German Folklore. (3 cr. Prereq-No knowledge of German required; cr for major or minor by arrangement with instructor) Literary and cultural investigation of the main folklore genres: charms, legends, folktales, and ballads; their composition, origin, and role in society with a strong emphasis on their international character. Readings in English. Majors required to bring a paper with use of secondary sources in English and German.

Ger 3642. The Grimms' Fairy Tales, Feminism, and Folklore. (3 cr. Prereq-No knowledge of German required; cr toward major or minor requires reading in German) Exploration of the Grimms' fairy tales and investigation of how various folktale types and gender stereotypes developed and became classical models for children and adults. The genre of the literary fairy tale in Germany, Europe, and North America. Comparisons of original literary versions with contemporary tales. All readings in English.

Ger 3701. History of the German Language. (3 cr. Prereq-1004) Change in German and lexicon, 750 A.D. to present.

Ger 3702. Beginning Middle High German. (3 cr. Prereq-1004) Middle High German grammar. Selected literary texts.

Ger 3703. Introduction to Old High and Low German. (3 cr. Prereq-3702 or #) Biographies, charms, heroic poetry, and miscellany from the 9th and 10th centuries.

Ger 3704. German Dialects. (3 cr. Prereq-1004) Contemporary regional dialects recorded on tape and written in texts. Synchronic and diachronic analysis.

Ger 3705. Characteristics of the Germanic Languages. (3 cr. Prereq-3703, Ling 3601 or Ling 5601) German and North Sea Germanic; West, North, and East Germanic; Proto-Germanic and Indo-European.

Ger 3993. Directed Studies. (1-4 cr [max 12 cr. Prereq-A, ∆]) Guided individual reading or study.

Ger 4040. German Play: Oral Interpretation and Performance of German. (1-3 cr [max 9 cr]) Dramatic reading of German play for pronunciation; preparation and rehearsal for production and performance of German play.

Ger 4521. The German-Americans: Literary and Linguistic Aspects. (3 cr) Study the contribution made by German immigrants to American culture, especially in Minnesota. Language and literature study is supplemented by field trips in Minnesota.


Ger 4622. German Cinema Since 1945. (3 cr. Prereq-3xxx film course or #) German cinema during the first years of postwar occupation and then in each of the two postwar German states, East and West Germany, from 1949-1990, and finally in the unified Germany from 1990 on. Includes films of DEFA, "New German Cinema," feminist cinema, German comedies of the 1980s and 1990s, etc.

Ger 5011. Advanced Conversation and Composition. (3 cr. Prereq-3012) Helps graduate and advanced undergraduate students achieve high proficiency in writing and speaking professional and academic German.

Ger 5016. Advanced Translation: Theory and Practice. (3 cr. Prereq-3016 or #) Translation theory, related issues in stylistics, philosophy of language; sample translations; student production of translations with methodological commentary.

Ger 5101. Analysis of German. (3 cr. Prereq-1004, Ling 3001 or Ling 5001 or #) Phonology, morphology, and syntax of standard German.

Ger 5410. Topics in German Literature. (3 cr [max 9 cr. Prereq-3104 or equiv]) Topic may focus on a specific author, group of authors, genre, period, or subject matter. Topics specified in Class Schedule.

Ger 5510. Topics in Contemporary German Culture. (3 cr [max 9 cr. Prereq-3104 or equiv]) A single topic of contemporary German culture explored in depth.

Ger 5610. German Literature in Translation. (3 cr [max 9 cr. Prereq-No knowledge of German required; cr toward major or minor requires reading in German] Study in depth of authors or topics from various periods in German literature. Requires no knowledge of German.

Ger 5630. Topics in German Cinema. (3 cr [max 9 cr. Prereq-3xxx film course or #]) Topics chosen may focus on specific directors, genres, film production or reception, and/or other formal, theoretical, historical, or political issues.

Ger 5711. History of the German Language I. (3 cr. Prereq-3102) Historical development of German from the beginnings to 1450.

Ger 5712. History of the German Language II. (3 cr. Prereq-5711) Historical development of German from 1450 to 2000.

Ger 5721. Introduction to Middle High German. (3 cr) Introduction to Middle High German language and literature. Study of grammar through formal description of Middle High German phonology, morphology, and syntax. Normalized MHG texts read.

Ger 5722. Middle High German: Advanced Readings. (3 cr. Prereq-5721) Acquisition of fluency in reading Middle High German normalized as well as non-normalized texts, both poetry and prose.

Ger 5731. Old High German I, (3 cr) Study of the monuments of Old High German. Detailed investigation of Old High German in comparison with the other Germanic languages.

Ger 5732. Old High German II. (3 cr. Prereq-5731) Study of the monuments of Old High German. Detailed investigation of Old High German in comparison with the other Germanic languages.

Ger 5734. Old Saxon. (3 cr) Study of the poetry of Old Saxon. Detailed investigation of Old Saxon in comparison with the other Old Germanic languages.

Ger 5740. Readings in Philology. (3 cr [max 9 cr]) Philological analysis of a chosen text in any medieval Germanic language.

Ger 5771. Early New High German. (3 cr) Reading and analysis of Early New High German texts. Formal description of Early New High German phonology, morphology, syntax.

Ger 5781. Varieties of Modern German. (3 cr. Prereq-5101) Lexical, syntactic, and phonological variations examined using contemporary methods of dialectology and sociolinguistics.

Ger 5801. German Script Since 1500: Readings. (3 cr) Handwriting and printed book scripts will be read, analyzed, and evaluated in their historical and cultural context.
German, Scandinavian, and Dutch (GSD)

College of Liberal Arts

GSD 3451V. Honors Major Project Seminar. (4 cr; A-F only. Prereq--Honors)
Major project under supervision of faculty member. Oral exam based on project.

GSD 3451W. Major Project Seminar. (4 cr; A-F only)
Students prepare major project under supervision of faculty member.

GSD 5103. Teaching of Germanic Languages. (4 cr)
Second language acquisition theory, methods, testing, and technology applicable to teaching of modern Germanic languages.

Gerontology (Gero)

Graduate School

Gero 5105. Multidisciplinary Perspectives on Aging. (3 cr)
Sociological, psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in America; human services and their delivery systems (health, nutrition, long-term care, education); public policy and legislation; environment and housing; retirement.

Gero 5110. Biology of Aging. (3 cr; A-F only)
Biological changes that occur with aging. Methods for studying aging, descriptions of population aging, theories on how/why we age. Process of aging in each body system, variation between individuals/populations. Clinical implications of biological changes with age. Guest lecturers from different disciplines.

GLBT Studies (GLBT)

College of Liberal Arts

GLBT 1001. Introduction to GLBT Studies. (3 cr)
History of contemporary GLBT-identified communities. Terms of theoretical debates regarding sexual orientation, identity, and experience. Analyzes problems produced and insights gained by incorporating GLBT issues into specific academic, social, cultural, and political discourses.

Global Studies (GloS)

Institute of International Studies

College of Liberal Arts

GloS 1015W. Introduction to Global History Since 1500. (4 cr)
Global History in Information Age. East-West division during Cold War; North-South relations in global economy. Emerging consciousness of global systems. Issues of human rights, labor migration, environmental degradation, and indigenous peoples. Emphasizes comparison of cases from Asia, Africa, Latin America.

GloS 1200. Global Studies Practicum. (3 cr [max 6 cr]; A-F only)
Exploratory experience in one part of the world. Brief exposure to another culture. Preparation for learning the language of the area visited.

GloS 1201. Exploring Global Studies. (1 cr [max 1 cr]; S-N only. Prereq--A)
Global studies, study abroad, and experiential learning. International film series, discussions with faculty, exposure to international media resources. Introduction to special language learning opportunities. Tied to Global Studies House residential experience.

GloS 1909W. Topics: Freshman Seminar. (3 cr; A-F only. Prereq-Fr or max 36 cr)
Topics specified in Class Schedule.

GloS 3003. Cultural Anthropology. (3 cr; f,Anth 3003. Prereq-Anth 1003 or #)

GloS 3101. Theoretical Approaches to Global Studies. (4 cr; A-F only. §3101H)
Introduction to social, political, economic, cultural, historical processes shaping contemporary global phenomena. Topics may include nationalism, colonialism, cultural production, environmental sustainability, globalization of economy, migration/diasporas, global conflict/cooperation.

GloS 3101H. Theoretical Approaches to Global Studies. (4 cr; A-F only. §3101)
Social, political, economic, cultural, historical processes shaping contemporary global phenomena. Topics may include nationalism, colonialism, cultural production, environmental sustainability, globalization of economy, migration/diasporas, global conflict/cooperation.

GloS 3102. Research Methods in International Relations. (3 cr)
Provides skills for the competitive work place and academic research. Information resources and methods for researching topics in international relations including both traditional print and new electronic forms of information.

GloS 3103. Colonialism and Modernity. (3 cr. Prereq-[3101, 3144] or #)
How modern world has been constituted by colonial encounter. Role of colonialism in construction of west. Images of non-western societies. Modernity in colonial/postcolonial societies. Problems/potential of universal categories such as democracy, gender, history, human rights. Globalization at the margins.

GloS 3144. Knowledge, Power, and the Politics of Representation in Global Studies. (4 cr; Prereq-6 cr in social sciences including [Geog 1301 or Hist 1015 or Hist 1019 or Hist 1012 or Hist 1018 or Pol 1025])
Introduction to theoretical issues. Power and production of knowledge about world regions. Knowledge, power, and political identities in contemporary world. Colonialism, nationalism, and modernity in shaping academic disciplines.

GloS 3140. International Human Rights Law. (3 cr; A-F only. Prereq-[3101, 3144] or #)
Issues, procedures, advocacy strategies regarding promotion/protection of international human rights. Students analyze recent case studies of human rights violations in light of evolving laws, enforcement mechanisms.

GloS 3402. Human Rights Internship. (3 cr; A-F only. Prereq-[3101, 3144] or #)
Hands-on experience in one of many Twin Cities area organizations engaged in promoting/protecting international human rights. Students work 100 hours in non-governmental organization. Substantive background on human rights laws/procedures, organizational theory/management information about human rights organizations.

GloS 3550V. Honors Course: Supervised Research Paper. (3 cr)
Supervised research paper.

GloS 3552H. Honors Seminar: Making of the Modern World. (3 cr; A-F only. Prereq--MacArthur Program or [IntR, honors])
Interaction across ecological frontiers, changing power relations, restructuring of systems of production, creation of new cultures/identities.

GloS 3553. Honors: Change in the Contemporary Global Order. (3 cr; A-F only. Prereq--#)
Important issues of global change: population growth, human migration; human relations with physical environment; struggles for popular power, sustainable democratic institutions; relations/conditions of work; cultural representations of social identities. Attention to U.S.-Mexican arena.

GloS 3558H. Honors: Junior Research Seminar. (3 cr; A-F only. Prereq-Jr, honors; [IntR or global studies] major)
Theoretical perspectives/methods available to researchers in international studies.

GloS 3602. Other Worlds: Globalization and Culture. (3 cr; A-F only. Prereq-[3101, 3144] or #)
Interconnectedness of world. Considering not one world, but many. Colonialism, consumption, diasporic conditions, global media, nationalism, supra-national governance. How globalization is experienced/contested locally/specifically.

GloS 3605. From Printing Press to Internet: Media, Communications, and History. (3 cr; A-F only)
Print public sphere in 17th, early 18th century. Political conflicts over freedom of press in 18th, 19th century. Emergence of advertising, public relations industries in 20th century. Significance of broadcast, computer network technologies for democratic political systems.

GloS 3620. Foreign Language News Coverage of International Events. (1 cr. Prereq-IntR major, completion of college language requirement in language used for the course)
Compares coverage of current news in selected foreign language newspapers with coverage in a U.S. paper such as The New York Times.

GloS 3645. Islamic World. (3 cr; A-F only. §Geog 3145)

GloS 3900. Topics in Global Studies. (3 cr [max 9 cr])
Topics vary every semester. See Class Schedule.

GloS 3910. Topics in East Asian Studies. (1-3 cr)
Selected topics in history not covered in regular courses, covering more than one geographic area/time period. Taught as staffing/ demand exist.

GloS 3920. Topics in European Studies. (3 cr)
Topics vary. See Class Schedule.

GloS 3930. Topics in Latin American Studies. (3 cr)
Topics vary. See Class Schedule.

GloS 3940. Topics in Middle Eastern Studies. (3 cr)
Description varies with topic title.
GloS 3950. Topics in Russian Area Studies. (3 cr) Description varies with topic title.
GloS 3960. Topics in South Asian Studies. (3 cr) Topics vary. See Class Schedule.
GloS 3981W. Major Project Seminar. (3 cr; A-F only) Supports senior project requirement by allowing students to formulate their own research questions, select a topic, develop and produce a 25-30 page undergraduate research paper.
GloS 3992. Directed Study. (1-4 cr [max 12 cr]. Prereq—A, Q) Guided individual reading or study.
GloS 4504W. Senior Project. (3 cr. Prereq—Sr or #) Research methods, writing skills, and bibliography related to field of study.
GloS 4801. International Development: Critical Perspectives on Theory and Practice. (4 cr; A-F only. Prereq—Q) Interdisciplinary approaches to development. Assumptions, competing paradigms, analysis of policies, projects, problems. Globalization, societal crisis, indigenous approaches to development. Partially taught in separate sections to deepen understanding of particular topic (e.g., environment, health, education).
GloS 4900. Senior Seminar in Global Studies. (3 cr; A-F only. Prereq—[3101, 3144, global studies major] or #) Globalization, nationalism, colonialism, cultural production, environmental sustainability, globalization of economy, migration, diasporas, global conflict/cooperation, human rights. Students examine theoretical debates and cutting edge scholarship and develop their own research projects. Capstone course.
GloS 4900H. Honors: Senior Seminar in Global Studies. (3 cr; A-F only. Prereq—[3101, 3144, honors student, global studies major] or #) Globalization, nationalism, colonialism, cultural production, environmental sustainability, globalization of economy, migration, diasporas, global conflict/cooperation, human rights. Students examine theoretical debates and cutting edge scholarship and develop their own research projects. Capstone course.
GloS 4940. Topics in Asian History. (1-4 cr [max 16 cr]) Selected topics in Asian history not covered in regular courses.
GloS 4960. Advanced Topics in South Asian Studies. (3 cr. Prereq—Jr or Sr or grad or #) Topics vary. See Class Schedule.
GloS 5103. Colonialism and Modernity. (3 cr; A-F only. Prereq—[3101, 3144] or #) How modern world has been constituted by colonial encounter. Role of colonialism in construction of the west. Images of non-western societies. Modernity in colonial/postcolonial societies. Problems/potential of universal categories such as democracy, gender, history, human rights. Globalization at the margins.
GloS 5114. International Perspectives—U.S.-Mexico Border Cultures. (3 cr. Prereq—Grad student) The relations of Mexico and the United States from an international perspective with a central focus on the cultural interchange in the border lands between the two countries. Uses both literary and historical materials.
GloS 5301. Environment and Empire. (3 cr; A-F only. Prereq—[3101, 3144] or #) Key issues in environmental history. Emphasizes global/colonial processes that have made modern environment. Global spread of diseases, modern remaking of world’s flora/fauna, idea of nature. New technologies and the environment. Conservationist ideology.
GloS 5602. Other Worlds: Globality and Culture. (3 cr; A-F only. Prereq—[3101, 3144, grad student] or #) Interconnectedness of world. Considering not one world, but many. Colonialism, consumption, diasporic conditions, global media, nationalism, supra-national governance. How globality is experienced/contested locally/specifically.
GloS 5603. Socialist/Post-socialist Transformations. (3 cr; A-F only) Transformations underway in post-socialist societies of Eastern Europe, former Soviet Union. Ramifications of abandonment of state socialism, introduction of market relations. Effect of former system, new market system on cultural institutions/identities.
GloS 5900. Topics in Global Studies. (0-3 cr) Proseminar. Selected issues in global studies. Topics specified in Class Schedule.
GloS 5910. Topics in East Asian Studies. (1-3 cr) Description varies with topic title.
GloS 5920. Topics in European Studies. (3 cr) Description varies with topic title.
GloS 5930. Topics in Latin American Studies. (3 cr) Description varies with topic title.
GloS 5940. Topics in Middle Eastern Studies. (3 cr) Description varies with topic title.
GloS 5950. Topics in Russian Area Studies. (3 cr) Description varies with topic title.
GloS 5960. Topics in South Asian Studies. (3 cr) Description varies with topic title.
GloS 5993. Directed Studies. (1-4 cr [max 12 cr]. Prereq—A, Q) Guided individual reading or study. Open to qualified students for one or more semesters.
GloS 5994. Directed Research. (1-4 cr [max 12 cr]. Prereq—A, Q) Qualified students work on a tutorial basis.

Greek (Grk)

Department of Classical and Near Eastern Studies

College of Liberal Arts

Grk 1002. Beginning Classical Greek II. (5 cr. Prereq—1001 or equiv) Continuing work on Greek grammar and syntax; readings from classical Greek authors including Herodotus and Aristophanes.
Grk 1111H. Honors Course: Beginning Classical Greek. (3 cr. §1001. Prereq—1111H, [honors or high ability as indicated by high school transcript]) Intensive Classical Greek covering material normally taught over two semesters.
Grk 1112H. Honors Course: Classical Greek, Recitation. (3 cr. §1002. Prereq—1111H, [honors or high ability as indicated by high school transcript]) Intensive Classical Greek covering material normally taught over two semesters.
Grk 1121H. Honors Course: Classical Greek, Recitation. (3 cr. §1002. Prereq—1111H, [honors or high ability as indicated by high school transcript]) Drills, composition exercises.
Grk 3111. Intensive Classical Greek. (3 cr. §1001, 61002, 51111. Prereq—3112; previous exp in another foreign language desirable) Intensive introduction to classical Greek covering two semesters of material in one semester. Undergraduates in this course must also register for 3112 when taking this class.
Grk 3112. Intensive Classical Greek, Recitation. (3 cr. §1001, §1002, 51112. Prereq—3111; previous exp in another foreign language desirable) Drills and composition exercises to help students learn classical Greek. Students must also register for 3111 when taking this course.
Grk 3113. Attic Authors. (4 cr. Prereq—1002 or 1111 or 3111 or 3 yrs high school Greek or #) Selections from classical Attic authors.
Grk 3114. Ionic Authors. (4 cr. Prereq—3113 or #) Students progress from intermediate to advanced Greek reading while exploring the world of Herodotus and Homer.
Grk 3310. Advanced Undergraduate Greek: Oratory. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) One or more appropriate authors studied during each course offering.
Grk 3320. Advanced Undergraduate Greek: Tragedy. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Advanced reading in Greek tragedy.
Grk 3330. Advanced Undergraduate Greek: Comedy. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Advanced readings in Greek comic literature.
Grk 3340. Advanced Undergraduate Greek: History. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Advanced readings from the Greek historians; traditions of Greek historiography.
Grk 3350. Advanced Undergraduate Greek: Philosophy. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Read one or more works of Plato or Aristotle in the original Greek and find out what they really mean. Texts vary with each offering.
Grk 3360. Advanced Undergraduate Greek: Religious Texts. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Reading and discussion of religious texts from Greek antiquity. Selections vary with each course offering.
Grk 3370. Advanced Undergraduate Greek: Epic. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Reading of classical Greek epic on an advanced level.
Grk 3380. Advanced Undergraduate Greek: Lyric. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Selections from Greek lyric poets.
Grk 3390. Advanced Undergraduate Greek: Romance. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Selections from the Hellenistic Romances.
Grk 3440. Advanced Undergraduate Greek: Later Greek Authors. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Selected topics in later Greek literature, especially Byzantine prose.
Grk 3450. Advanced Undergraduate Greek: Classical Authors. (3 cr [max 9 cr. Prereq—3114 or 3 yrs HS Greek or #) Selected topics in classical Greek literature; topics specified in Class Schedule.
Grk 3951. Major Project. (4 cr. Prereq—Greek-Latin or Greek major; three 3000 Greek courses or #) Research project using documents and other sources from the ancient world. Students select project in consultation with a faculty member who directs the research and writing.
Grk 3960H. Honors Course: Advanced Undergraduate Greek Reading. (3 cr [max 12 cr. Prereq—Regis in honors program or high ability as indicated by transcript) Student attends Greek 33xx, 3440, 3450 and does additional work for honors credit.
Grk 3993. Directed Studies. (1-4 cr).
Grk 5012. Prose Composition. (3 cr)
Moving step by step through Ancient Greek grammar, starting with simple sentences and progressing to complex ones. Course ends with students translating short passages of modern English prose into Greek.

Grk 5013. Advanced Composition (3 cr. Prereq–# or 8)
Detailed study of English-to-Greek verse composition and/or the writing styles of individual Greek authors.

Grk 5032. Text Criticism (3 cr. Prereq–Greek 3114)
Theory and practice. Elements of paleography and manuscript study. Basic tools for analyzing a textual apparatus with some independence; constructing a critical edition of a literary text.

Grk 5121. Biblical and Patristic Greek (3 cr. Prereq–3114 or 3120)
Septuagint, Philo, Josephus, New Testament, Apostolic Fathers, and other patristic literature to 5th century C.E. Reading and discussion of selected texts in the major genres.

Grk 5310. Greek Literature: Oratory (3 cr. max 9 cr.)
One or more appropriate authors studied in a given course.

Grk 5320. Greek Literature: Tragedy (3 cr. max 9 cr.)
Reading of Greek tragedy on advanced level.

Grk 5330. Greek Literature: Comedy (3 cr. max 9 cr.)
Advanced readings in Greek comedy.

Grk 5340. Greek Literature: History (3 cr. max 9 cr.)
Advanced readings from the Greek historians; traditions of Greek historiography.

Grk 5350. Greek Literature: Philosophy (3 cr.)
Read one or more works of Plato or Aristotle in the original Greek and find out what they really mean. Selections vary with each offering.

Grk 5360. Literature: Religious Texts (3 cr. max 9 cr.)
Reading and discussion of religious texts from Greek antiquity, such as the Homeric Hymns, cultic verse, aretology, sacred tales, oracle texts.

Grk 5370. Greek Literature: Epic (3 cr. max 9 cr.)
Reading of classical Greek epic on an advanced level.

Grk 5380. Greek Literature: Lyric (3 cr. max 9 cr.)
Selections from the Greek lyric poets.

Grk 5390. Greek Literature: Romance (3 cr. max 9 cr.)
Selections from the Hellenistic Romances of, e.g., Chariton, Longus.

Grk 5440. Greek Literature: Later Authors (3 cr. max 9 cr.)
Selected topics in later Greek literature, especially Byzantine prose.

Grk 5450. Greek Literature: Classical Authors (3 cr. max 9 cr.)
Selected topics in classical Greek literature; topics specified in Class Schedule.

Grk 5621. Greek Paleography (3 cr.)
Analysis of various hands used in Greek manuscripts with attention to date and provenance; history of the transmission of Greek literature.

Grk 5715. Introduction to the Historical-Comparative Grammar of Greek and Latin (3 cr. Prereq–# or 2 yrs college Latin)
Historical and comparative grammar of Greek and Latin from their Proto-Indo-European origins to the classical norms.

Grk 5716. History of Greek (3 cr. Prereq–Grk/Lat 5715 or equiv, 2 yrs Greek)
Reading and formal analysis of documents illustrating the evolution of the Greek language from Mycenaean to modern times.

Grk 5993. Directed Studies (1-4 cr. min 18 cr.)
Prereq–# or 2 yrs Greek
Guided individual reading or study.

Grk 5994. Directed Research (1-12 cr. max 18 cr.)
Prereq–# or 2 yrs Greek
Supervised original research on topic chosen by student.

Grk 5996. Directed Instruction (1-12 cr. max 20 cr.)
Prereq–# or 2 yrs Greek
Supervised teaching internship.

Health Informatics (HInf)
Department of Laboratory Medicine and Pathology

Medical School

HInf 5430. Health Informatics I (3 cr. A-F only)

HInf 5431. Health Informatics II (3 cr)

HInf 5436. Seminar (1 cr. S-N only)
Presentation and discussion of research problems, current literature and topics of interest in Health Informatics.

HInf 5494. Topics in Health Informatics (1-6 cr.)
Individual or group studies in health informatics.

HInf 5496. Internship in Health Informatics (1 cr. max 9 cr.)
Prereq–3040 or qualified fr # or 8)
Practical clinical experience not directly related to student’s normal academic experience.

Hebrew (Hebr)
Department of Classical and Near Eastern Studies

College of Liberal Arts

Hebr 1001. Beginning Hebrew I (5 cr.)
For beginners whose goal is biblical or post-biblical Jewish studies, or modern Israeli Hebrew. Leads to speaking. Leads to reading, writing Hebrew. Emphasizes communication proficiency. Cultural materials are incorporated.

Hebr 1002. Beginning Hebrew II (5 cr. Prereq–1001 or #)
Continuation of 1001. For students whose goal is biblical or post-biblical Jewish studies, or Modern Israeli Hebrew. Leads to speaking, writing Hebrew with emphasis on communication proficiency. Cultural materials incorporated.

Hebr 1012. High Performance Hebrew I (4 cr.
Prereq–Previous exposure to Hebrew or ability to work at an intensive pace)
Similar to Hebrew I. Intended for those who may have had previous exposure to the language but need a full presentation of course materials and for honors students and highly motivated beginners.

Hebr 1013. High Performance Hebrew II (4 cr.
Prereq–1012 or #)
Similar to Hebrew II. Intended for those who may have had previous exposure to the language but need a full presentation of course materials and for honors students and highly motivated beginners.

Hebr 1104. Basics of Biblical Hebrew I (4 cr.)
Basic grammar/syntax preparatory to reading simple narrative texts in Bible. Multiple approaches to

Hebr 1105. Basics of Biblical Hebrew II (4 cr.
Prereq–Hebr 1104)
Progression to more sophisticated reading of narrative, prophetic, and legal texts. Presentation and discussion of multiple approaches to problems and issues in biblical scholarship.

Hebr 3011. Intermediate Hebrew I (5 cr. Prereq–# or qualified fr # or 8)
Prepares students for CLA language requirement. Strengthens and extends proficiency in speaking, reading, writing, and comprehension of modern Hebrew. Read and discuss prose, poetry, news, and film. Important features of biblical and classical Hebrew introduced. Taught primarily in Hebrew.

Hebr 3012. Intermediate Hebrew II (5 cr.
Prereq–3011 or qualified fr # or 8)
Extensive reading of simplified modern Hebrew prose selections. Discuss poetry, newspaper, film, and TV in Hebrew. Israeli cultural experiences. Home composition, listening comprehension, and speaking skills to prepare for proficiency exams. Basic mastery of biblical prose and simple poetic texts. Taught in Hebrew.

Hebr 3015. Advanced Modern Hebrew I (3 cr.
Prereq–Hebr 3012)
Advanced studies in a variety of genres and media including fiction, poetry, drama, film, and journal. Emphasis on oral and written self expression. Materials from several periods are used to prepare for future specialized study. Taught in Hebrew.

Hebr 3016. Advanced Modern Hebrew II (3 cr.
Prereq–# or qualified fr # or 8)
A continuation of 3015. Emphasis on expanded oral and written self expression. Samples a variety of Hebrew periods to prepare for specialized study. Studies utilize a variety of genres and media including fiction, poetry, drama, film, and journal. Taught in Hebrew.

Hebr 3111. Rabbinic Texts I (3 cr.
Prereq–# or qualified fr # or 8)

Hebr 3112. Rabbinic Texts II (3 cr.
Prereq–# or qualified fr # or 8)

Hebr 3122. Medieval Hebrew Literature I (3 cr.
Prereq–# or qualified fr # or 8)
Readings in medieval Hebrew philosophical texts including Sa’adia Gaon, Judah Halevi, Maimonides, and others.

Hebr 3123. Medieval Hebrew Literature II (3 cr.
Prereq–# or qualified fr # or 8)
Medieval Hebrew religious and secular poetry. Representative poets from the Middle Ages. Yana, Kalir, Ibn Gabirol, Halevi, others.

Hebr 3131. Talmudic Texts (3 cr.
Prereq–# or qualified fr # or 8)

Hebr 3200. Topics in Biblical Studies: A Book of the Bible (3 cr.
Prereq–# or qualified fr # or 8)
Scientific study of a book of the Bible. Both modern scholarly methods and research, and medieval exegesis are utilized. Analysis of selected text.

Hebr 3201. Readings in Biblical Hebrew I (3 cr.
Prereq–# or qualified fr # or 8)
Study text of the Hebrew Bible and learn to use basic research tools and methodologies. Close reading of narrative biblical texts. Develop reading fluency and familiarity with methods of research in biblical studies.

Hebr 3202. Readings in Biblical Hebrew II (3 cr.
Hindi 1001. Introduction to Conversational Hindi. 
(3 cr; A-F only) Advanced grammatical structures, oral forms, new vocabulary reinforced from lessons around everyday life situations. Oral/written drills, reading for comprehension, audio-visual work.

Hindi 1101. Beginning Hindi. (5 cr) 
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Hindi 1102. Beginning Hindi. (5 cr; Prereq-1101) 
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Hindi 3101. Beginning Hindi. (5 cr) 
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Hindi 3102. Beginning Hindi. (5 cr) 
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Hindi 3131. Intermediate Hindi. (5 cr; Prereq-1102 or #) 
Development of reading, writing, speaking, and listening skills. Grammar review, some basic compositions and oral presentations.

Hindi 3132. Intermediate Hindi. (5 cr; Prereq-3131 or #) 
Development of reading, writing, speaking, and listening skills. Grammar review, some basic compositions and oral presentations.

Hindi 4161. Advanced Hindi. (4 cr; Prereq-3132 or #) 
Continued emphasis on the development of communication skills, i.e., the ability to comprehend both written and spoken texts, and to speak, read, and write in Hindi beyond the intermediate level.

Hindi 4162. Advanced Hindi. (4 cr; Prereq-4161 or #) 
Continued emphasis on the development of communication skills, i.e., the ability to comprehend both written and spoken texts, and to speak, read, and write in Hindi, beyond the intermediate level.

Hindi 5040. Readings in Hindi Text. (2-4 cr; max 12 cr; A-F only; Prereq-4162 or equiv or #) 
Students read authentic materials of various types to improve reading/speaking ability. Topics specified in Class Schedule.

Hindi 5710. Topics in Hindi Language, Literature, and Culture. (4-5 cr) 
Topics in Hindi literature or the linguistic structure of Hindi.

Hindi 5990. Directed Research. (3-5 cr; Prereq-4, A, A) 
Directed individual reading or study of modern Hindi texts.

Hindi 5993. Directed Readings. (1-4 cr; max 12 cr; Prereq-4, A, A) 
Guided individual reading or study of modern Hindi texts.


Course Descriptions

Hist 1015W. Introduction to Global History Since 1500. (4 cr; A-F only; §1015H, §Glos 1015, §Glos1015H) 

Hist 1017. World History. (3 cr; §1011) 
World civilizations from prehistory to 1550, comparing religion, politics, economy, society, and culture. Examples drawn from Africa, Europe, Asia, and the Americas.

Hist 1018. World History: The Age of Global Contact. (3 cr; §1012) 
Case study approach to world history from 1450 to 1920s. Comparisons of and connections among various cultures. Emphasis on analyzing primary documents to show how historical knowledge is produced. Course is Web-enhanced.

Hist 1019. Introduction to Global History Since 1500. (3 cr; §1013W, §1013V, §Glos 1013W, §Glos 1013V) 

Hist 1026. Western Civilization from Its Origins to ca 1500. (3 cr; §1031) 
Western civilization from its origins in ancient Middle East to Europe in 1500. Law, religion, governments, history of ideas, social organization.

Hist 1027. Western Civilization from 1500 to Present. (3 cr; §1032) 
Role of European civilization in world history from early 16th century to present. Broad chronological periods/themes.

Hist 1031V. Honors: Survey of Western Civilization From Its Origins to ca 1500. (4 cr) 
The development of western civilization from its origins in the ancient Middle East to Europe in 1500. Law, religion, government, history of ideas, social organization.

Hist 1031W. Western Civilization from Its Origins to ca 1500. (4 cr; §1026) 
Western civilization from its origins in ancient Middle East to Europe in 1500. Law, religion, governments, history of ideas, social organization.

Hist 1032V. Honors: Western Civilization From 1500 to Present. (4 cr) 
Role of European civilization in world history from early 16th century to present. Broad chronological periods/themes.

Hist 1032W. Western Civilization from 1500 to Present. (4 cr) 
Role of European civilization in world history from early 16th century to present. Broad chronological periods/themes.

Hist 1301V. Honors: U.S. History to 1880. (4 cr) 
America to 1880.

Hist 1301W. U.S. History to 1880. (4 cr) 
America to 1880.

Hist 1302V. Honors: U.S. History to 1880. (4 cr) 
America 1880 to present.

Hist 1302W. U.S. History to 1880. (4 cr; §1308) 
Modern America from 1880 to the present.
Hist 1307. American History Through Reconstruction. (3 cr)
Survey of political, economic, and social history of the United States. Emphasizes forces that resulted in the emergence of Modern America. Colonial early national period, from the Revolution through Civil War and Reconstruction.

Hist 1308. U.S. History: 1800 to Present. (3 cr; §1302)
Modern America, from 1800 to the present.

Hist 1904. Freshman Seminar. (3 cr [max 6 cr]; A-F only)
Topics specified in Class Schedule.

Hist 1905. Freshman Seminar. (3 cr; A-F only)
Topics specified in Class Schedule.

Hist 1907W. Freshman Seminar. (3 cr; A-F only)
Topics specified in Class Schedule.

Hist 1908W. Freshman Seminar. (3 cr; A-F only)
Topics specified in Class Schedule.

Hist 1909W. Freshman Seminar. (3 cr [max 6 cr]; A-F only)
Topics specified in Class Schedule.

Hist 3051. Ancient Civilization: Near East and Egypt. (3 cr)
A broad survey of ancient Near Eastern and Egyptian history and culture from the prehistoric to the rise of Persia around 550 B.C.

Hist 3052. Ancient Civilization: Greece. (3 cr)
A broad survey of ancient Greek culture and history from the third millennium B.C. to the death of Alexander the Great in 323 B.C.

Hist 3053. Ancient Civilization: Rome. (3 cr)
A broad survey of the culture and history of Rome from its origins to the decline and fall of the Roman Empire in the third and fourth centuries A.D.

Hist 3101. Introduction to Medieval History. (3 cr)
Europe from the decline of Rome to the early Renaissance; politics, institutions, society, economy, and culture of the Middle Ages.

Hist 315W. British History to the 17th Century. (4 cr)
The making of the English nation: Anglo-Saxons and Normans; development of English law and Parliament; Reformation and constitutional crisis; early Wales, Scotland, and Ireland.

Hist 3152W. British History From the 17th Century. (4 cr)
Civil War, Revolution and constitutional settlement; industrialization and growth of democracy; rise and decline of British Empire.

Hist 3211. History of Sexuality. (3 cr; A-F only)
History of sexuality in Europe, from ancient Greece to present. Plato’s philosophy of love, St. Augustine’s conception of sin, prostitution in 15th century, sexual science of Enlightenment. Industrial revolution and homosexual subcultures. Rape scares and imperialism. Eugenics and Nazi Germany.

Hist 3244. History of Eastern Europe. (3 cr)
History of the peoples of the region from their origins to modern times, culture and society in the Middle Ages; Golden Age of Eastern Europe; loss of independence; nationalism and formation of national states; fascism and World War II, Jews in Eastern Europe; communist and post-communist periods.

Hist 3251. Europe and the American Challenge in the 20th Century. (3 cr; A-F only)
European response to social, political, cultural influence of the United States in Europe in 20th century. Historical studies, diplomatic memoirs, literature, films, film criticism.

Hist 3281. European Intellectual History: the 18th and 19th Centuries. (3 cr)
The first of a two-semester course dealing with logical, philosophical, and methodological issues in the historical, social, and natural sciences from the late 17th to the mid-19th century. Readings are from original sources.

Hist 3282. European Intellectual History: The Late 19th and 20th Centuries. (3 cr)
Second semester of readings in fundamental texts dealing with issues in logic, philosophy, and the methodologies of the historical, social, and natural sciences from the late 19th century to the present. Readings are from original sources.

Hist 3347. Women in Early and Victorian America: 1600-1890. (3 cr)
The varied experiences of American women 1600-1900. Topics include women’s involvement in the dispossession of native peoples, westward expansion, slavery, industrialization, reform, revolution, and transformations in family life and sexuality.

Hist 3348. Women in Modern America. (3-4 cr)
History of women in the United States from 1890 to the present. Explores women’s changing roles in politics, the labor force, the family, and popular culture.

Hist 3348W. Women in Modern America. (3-4 cr)
History of women in the United States from 1890 to the present. Explores women’s changing roles in politics, the labor force, the family, and popular culture.

Hist 3401W. Early Latin America to 1825. (4 cr; A-F only)
Native American and colonial periods to 1825, with emphasis on social, cultural, and economic aspects.

Hist 3402W. Modern Latin America 1825 to Present. (4 cr)
National and contemporary period 1825 to present, with emphasis on social, cultural, political, and economic change.

Hist 3419. The World’s Economy Since 1500 in Comparison. (3 cr)

Hist 3421. The World and the West 1400-1900. (3 cr; A-F only)
Prewar–One sem of world history or Western civilization recommended
Survey of the political, economic, religious, and cultural interaction between the peoples of Europe and the peoples of Africa, the Americas, and Asia, with reference to perceptions of alien cultures by both sides.

Hist 3423. Central American Revolutions. (3 cr)
Social, political and economic issues that have shaped Central American history for nearly two centuries. Focuses on influences of colonial histories, capitalist development, ethnic/racial conflict, foreign intervention, Catholic Church, civil war throughout region. Readings cover events in Guatemala, Honduras, El Salvador, Nicaragua, Costa Rica, Panama.

Hist 3424. Women and Gender in Latin American History. (3 cr)
Changing gender norms in Latin America over time as compared with lives of women and men of diverse classes and ethnic groups. How women responded to their position in society, on a continuum from accommodation to resistance.

Hist 3425. History of Modern Mexico. (3 cr)
Mexico from independence to the present: struggles for land, liberty, and equality; ethnicity, gender, and class; economic growth, nationalism, and globalization; urbanization, immigration, demographic transition.

Hist 3427. History of Cuba and Puerto Rico. (3 cr)
Historical development of Cuba and Puerto Rico from pre-Columbian times through Spanish conquest to the present. Conquest and colonization, slavery, Hispanic Caribbean society and culture, Operation Bootstrap, Cuban Revolution.

Hist 3428. History of Relations Between United States and Mexico: 1821 to Present. (3 cr)
United States and Mexico relations in the 19th and 20th centuries. Examine histories as they intersect in the late 1820s; loss of Texas; Mexican-American War; economic relations between the two countries including NAFTA and the Chiapas rebellion of 1994.

Hist 3431. History of Africa to 1800. (4 cr)
A survey of African history from earliest times to 1800. Focuses on socioeconomic, political, and cultural development in pre-colonial Africa from ancient Egypt through the era of the trans-Atlantic slave trade.

Hist 3432. History of Africa Since 1800. (4 cr)
Provides a general survey of modern African history from the early 19th century to the present. Focuses on socioeconomic, political, and cultural development in Africa from the abolition of the trans-Atlantic slave trade through the postcolonial era.

Hist 3434. History of South Africa to 1910. (3 cr)
Introduction to history of South Africa from early humans to arrival of first Dutch settlers at Cape of Good Hope in 1652 to formation of Union of South Africa in 1910.

Hist 3435. History of South Africa from 1910. (3 cr)
History of South Africa from union to present. Focuses on issues such as African/Afrikaner nationalism, structures of apartheid, forced population removals, divestment/sanctions, and post-apartheid era.

Hist 3441. Chicana/o History to 1900. (3 cr)
History of the Mexican people from the 16th through the 19th centuries. Historical theories of colonialism, expansion, economy, assimilation, migration and settlement; race, class and gender, political, social, and cultural interaction and conflict.

Hist 3442. Chicano History: 1900 to Present. (3 cr)
Migration, repatriation, the Bracero program, contemporary Chicana/o politics, the Chican/o movement, work, society, and culture. Lecture format with 2-3 videos/movies on selected topics. A wide range of reading from texts and articles.

Hist 3451. Asia in the Ancient World. (3 cr; A-F only)
Comparative approach to the birth of civilization in Asia; rise of ancient wars, imperialism and genocide; ethical protest against violence; rise of the universal empires; culmination, decline, and fall of classical Asian civilizations.

Hist 3461. Introduction to East Asia I: The Imperial Age. (3 cr)
Comparative survey of early history of China, Japan, Korea, and Vietnam; early Chinese thought; diffusion of Confucianism, Buddhism, and other values throughout East Asia; political and social history of region to 1600.

Hist 3462. Introduction to East Asia II: 1200-2000. (3-4 cr)

Hist 3464. China in the Song, Yuan, and Ming Dynasties. (3 cr; §5464, §EAS 3464)
China during the Song (976-1297), Yuan (1279-1368), and Ming (1368-1644) dynasties; political institutions and social structures. Attention to primary sources and how historians ask and answer questions about the past.

Hist 3465W. China in the Ming and Qing Dynasties. (3 cr; §5465, §EAS 3465)
The political and social history of China from about 1600 until the end of the Qing dynasty in 1911. Topics include ethnicity, daily life, legal structures, city life, and peasantry.

Hist 3467W. State and Revolution in Modern China. (3 cr; §5467, §EAS 3467)
Modern China’s political evolution, including the Taiping Rebellion, Republican Revolution, Rise of Nationalist and Communist Parties, Maoist era; reform under Deng Xiaoping and the emergence of democracy in Taiwan.
Course Descriptions

Hist 3468W. Social Change in Modern China. (3 cr. 389, 52468, 5EAS 3468) (3 cr)
Opium War and opening of Treaty Ports in 19th century; missionary activity and cultural influence; changes in education system; women's movement; early industrialization; socialism and collectivization after 1949; industrialization of Taiwan; PRC's entry into the world trading system.

Hist 3471. Modern Japan, Meiji to the Present (1868-2000). (3 cr)

Hist 3472. Early Modern Japan. (3 cr)

Hist 3475. Japan and the Second World War. (3 cr)
From origins of war in China through Pearl Harbor decision, conquest of Southeast Asia, defeat in the Pacific, impact of atomic bomb, American occupation, and creation of United States-Japanese alliance.

Hist 3479. Wall and Market: History of Chinese Cities. (3 cr; A-F only)
Introduction to traditional Chinese cities and their modern transformation. Ideal city plan in Confucian classics compared with physical layout of some major cities. Models about Chinese cities, influence of the models on our understanding of Chinese history/society.

Hist 3481. Ancient and Medieval India. (3 cr; A-F only)
The history of India; origins of civilization along the Indus River, Indo-European intrusion, rise of an Indo-Gangetic civilization, response of Buddha to violence, Mauryan empire, classical civilization of India, rise of medieval Hinduisum.

Hist 3485. History of Southeast Asia. (3 cr; A-F only) Origins of civilization, rise of empires such as Angkor, diffusion of Hinduism, Buddhism, Islam, and Christianity, West European intrusion through the imperialist era, rise of nationalism, and the establishment of nation-states.

Hist 3488. Genesis of Modern India. (3 cr; A-F only) Spans the period of Moghul empire in the 1520's to the demise of the British empire in 1947, including present day India, Pakistan, and Bangladesh.

Hist 3489. 20th Century India. (3 cr; A-F only) India under British hegemony in 1914 through Mahatma Gandhi and his nationalistic movement; World War II; the British departure; creation of India and Pakistan; Nehru; Indira and Rajiv Gandhi.

Hist 3491. Islamic Civilization. (3 cr)
Islamic legacy in the classical age (800-1400) in the sciences—natural and medical—mathematics, philosophy, and literature, and their transmission to Europe.

Hist 3493. Islam: Religion and Culture. (3 cr; Prereq—Soph or Jr or Sr) Religion of Islam, faith, practices, sectarian splintering. Expansion outside original home to status of world religion. Institutions. Status in Asia, Europe, and Americas.

Hist 3502. Ancient Israel: From Conquest to Exile. (3 cr)
Israelite history in context of what is known from Egyptian, Canaanite, and Mesopotamian sources. Focuses on issues raised by archaeological data related to Israelite conquest of Canaan.

Hist 3505. Survey of the Middle East. (3 cr)
Peoples, lands, and cultures of the Middle East.

Historical survey from earliest civilizations to the present.

Hist 3541. Islam in the Catholic Age. (3 cr)
The Rise of Islam in its Arabian setting. Roles of the prophet, the orthodox and Umayyad caliphs. Development of Islamic state and empire, organizations, institutions, and status of Muslims and non-Muslims.

Hist 3542. Medieval Islam. (3 cr)
Islamic dynasties, Umayyads of Spain, Shiites, assassins, Abbasid Caliphate's disintegration and rise of Selguk Turks. Sunnism re-emerges. IlKhanids.

Hist 3543. Arabs Under Mamluks and Ottomans. (3 cr)
Arabs under Mamluk rule. Ottomans conquer Mamluk territory. Ottoman rule. Disintegration and re-emergence under Muhammad Ali of Egypt, dynastic struggles in Syria, rise of Young Turks and Arab revolt.

Hist 3544. Arab World 1920 Until the Present. (3 cr)
Arab world since independence; the struggle for liberation, political stability and development in the Middle East; political structure and conflicts; impact of Arab-Israeli conflict.

Hist 3547. The Ottoman Empire. (3 cr)
Founding of Ottoman society/state to empire, 1300 to end of empire in 1920. Lands, institutions, peoples, language.

Hist 3608W. History of the Catholic Church in the Middle Ages. (3 cr. Prerequisite—Intro course in European history before 1500 recommended)
Religious beliefs of Latin Christianity as officially taught and as received by ordinary folk; organization of the church and its implantation in lay society; relations between Latin Christendom and its neighbors, Orthodox and Islamdom.

Hist 3609. Military History of Medieval Western Europe. (3 cr)
Concept and conduct of war in Western Europe in the Middle Ages and the relation between the military and society.

Hist 3611. Medieval Cities of Europe: 500-1500. (3 cr)
Evolution of Western European cities from the Roman town to the early Renaissance city-state.

Hist 3613. History of the Crusades. (3 cr)

Hist 3614. Women in Medieval Europe. (3 cr)
Women's role in family, politics, religion, work, and social movements. Representations of women in religious texts, art, literature, scientific studies, and law. Methods/approaches to study of women's history.

Hist 3614W. Women in Medieval Europe. (3 cr)
Women's role in family, politics, religion, work, and social movements. Representations of women in religious texts, art, literature, scientific studies, and law. Methods/approaches to study of women's history.

Hist 3615W. Women in European History: 1500 to the Present. (3 cr)
Women's history and gender relations in modern European history. Methods and primary sources for women's history and the implications of inclusion of women in historical study.

Hist 3616W. France in the Middle Ages. (3 cr)
Politics, society and culture in medieval France from the end of the Carolingians to the end of the Hundred Years War.

Hist 3618. The Dark Ages Illumined: Medieval Europe to 1050. (3 cr)
Origins of medieval Europe, Germanic and Viking invasions, feudalism, manorialism, Islam, the papacy, monarchies, intellectual developments.

Hist 3619. Chivalry, Crisis, and Revival: Medieval History 1050-1500. (3 cr)
Chivalry and courtly love, crusades, revival of towns and trade, monarchies, religious developments, Black Death, famine, and wars.

Hist 3621W. Renaissance Italy: 1200-1550. (3 cr. Prerequisite—Intro course in European history before 1500 recommended)
The political and cultural history of the city-states of northern and central Italy, 1200-1550, with an emphasis on Florence and Venice; readings include Dante and Machiavelli.

Hist 3623W. Germany in the Age of Reformation. (3 cr. Prerequisite—General course in European history before 1500 recommended)
History of religious reform movements—Lutheran, Calvinist, Catholic—in the context of German politics, society, and culture; emphasis on primary source readings (written during the period).

Hist 3626. France From the Late 16th Century Through Napoleon: 1594-1815. (3 cr)
The evolution of French government, economy, and society in a broad context: monarchical power and its disintegration; Louis XIV at the apex of the Old Regime; the Enlightenment; the French Revolution; and the rise and fall of Napoleon Bonaparte.

Hist 3632. History of Germany: Reformulation to Unification: 1500-1871. (3 cr)
The Reformation era; warfare and demographic catastrophe of the early 1600s; life in town and country; absolutism; Baroque culture; family life and its transformation; economic crisis; Revolution of 1848; the military path to unification.

Hist 3633. Modern Germany: 1870-Present. (3 cr)

Hist 3634. The Emergence of Ethnic Conflict: Eastern Europe and Byzantium to Circa 1500. (3 cr)
Byzantine and Eastern European history from the 6th century to ca. 1500. Major topics include Byzantium, the medieval Balkans, the rise of the Ottoman empire in Europe, and the West Slavic-Hungarian lands till the Renaissance.

Hist 3636. Conquest, Colonization, and Centralization: The History of European Russia Circa 700 to Circa 1700. (3 cr)
Major topics include the Khazar, Rus’, and Bulghar states, Mongol conquest and rule, Muscovite Russia, Ukraine in the 16th-17th centuries, and the Crimean Khante.

Hist 3637. Modern Russia: From Peter the Great to the Present. (3 cr)
Political, social, and cultural forces which have shaped modern Russia. Emphasis will be on modernization, attempts at reforms in the imperial and Soviet period, and the dissolution of empires.

Hist 3641. Anglo-Saxon England: From King Arthur to William the Conqueror. (3 cr)
History of medieval England from the end of Roman rule to the Norman Conquest. All aspects of society examined to provide a broad picture of the creation of Anglo-Saxon England and the Celtic Frontiers.

Hist 3642. Knights, Peasants, and Bandits in Medieval England. (3-4 cr)
Social history of medieval England from 1066 to 1500. Peasants, nobility, and bourgeoisie, including their economic institutions, living conditions, and entertainments. Legal and illegal ways of coping with economic and social change resulting from plague and wars.

Hist 3651. England Under the Tudors: 1485-1603. (3-4 cr)
For definitions of course numbers, symbols, and abbreviations, see page 296.
Henry VIII and the English Reformation. The early Tudor period, 1485-1547; the reign of Henry VIII and his break with the papacy.

Hist 3652. England Under the Stuarts: 1603-1689. (3 cr)
History of England from the accession of James I (1603) to the Glorious Revolution (1689), including political, social, religious, military, and intellectual history.

Hist 3671. Modern Britain: 1783-1867. (3 cr)
Britain from the end of the American Revolution to the mid-Victorian age; industrialization and reform.

Hist 3672. Modern Britain Since 1867. (3 cr)
Britain from the mid-Victorian age to the near-present; the growth of democracy, the height and depth of world power.

Hist 3881. Irish History. (3 cr)
History of Ireland, primarily modern, with emphasis on politics and Anglo-Irish relations.

Hist 3891W. The British Empire. (3 cr; A-F only)
Gain/loss of colonies in Ireland, America, India, Africa. Development of racism, multicultural composition of British society, debates about economic motives for empire, resistance of colonized peoples to conquest/dominion.

Hist 3703W. European Cities: 1300-1800. (3 cr; Prereq: Background in European civilization of late Middle Ages) The biographical experience of selected cities in early modern Europe set within the context of ideas about urban formation and development. Key cities are Venice, Florence, Antwerp, Madrid, Seville, Amsterdam, Paris, and London.

Hist 3704W. Daily Life in Europe: 1300-1800. (3 cr)
Living conditions and daily life in Europe before the Industrial Revolution. Topics include marriage and family, life at court, nobles, peasants, disease, farming, livestock-raising, urban life, the middle classes, manufacturing, trade, piracy, witchcraft, war, crime, and social deviance.

Hist 3705. From Printing Press to Internet: Media, Communications, and History. (3 cr; A-F only)
Print public sphere in 17th, early 18th century. Political conflicts over freedom of press in 18th, 19th century. Emergence of advertising, public relations industries in 20th century. Significance of broadcast, computer network technologies for democratic political systems.

Hist 3707. Social History of Modern Europe. (3 cr)
Transformation from traditional agrarian to modern societies, from 20th-century industries. Social change: history of the family, marriage and sexuality; the roots of nationalism and racism.

Hist 3709. Science and Enlightenment. (3 cr)

Hist 3712. Economic History of Modern Europe. (3 cr)
Long-term rise/transformations of European economy. Emergence of capitalism and spread of economic growth up to WWII. Political economy of growth, instability, and structural change in 20th century.

Hist 3714W. Medieval Spain. (3 cr)
Development of the medieval kingdoms of Spain from Roman times to ca. 1500. Major social, economic, and cultural developments. Christians, Jewish, and Muslim interaction. Role of Spain in the beginning of European expansion.

Hist 3715. Modern Spain: 1500 to the Present. (3 cr)
Ferdinand and Isabella, the Habsburg and Bourbon dynasties, the 20th-century Civil War and Franco regime, and into the present. Readings, lectures, films, slides, and music will provide a comprehensive view of a vibrant people and their modern history.

Hist 3721. 20th-Century Europe From the Turn of the Century to the End of World War II: 1900-1945. (3 cr; 55721)
The social, political, and cultural changes and conflicts in Europe from the late 19th century to the end of World War II. The background to WWI, its impact, revolution, the failure of interwar stability, fascism, WWII, and its consequences.

Hist 3722. 20th-Century Europe From the End of World War II to the End of the Cold War: 1945-1991. (3 cr)
The social, economic, political, and cultural impacts of WWII upon Europe; the division of Europe, communist regimes in Eastern Europe, cooperation in Western Europe, impacts of modernization and the end of the Cold War in 1991.

Hist 3727W. History of the Holocaust. (3 cr)

Hist 3729. Nazi Germany and Hitler's Europe. (3 cr; A-F only)
Comprehensive exploration of Third Reich. Students will examine How the Nazis came to power, transformations of 1930s, imposition of racial politics against Jews/others, nature of total war. Students read historical accounts, memoirs, state documents, view films.

Hist 3731W. Citizens and the State in Modern France From the Revolution of 1789 to Post-de Gaulle: 1789-1991. (3 cr)
A history of the citizen and the state in France from the French Revolution to the present.

Hist 3735. Politics of Ideas: European Thought in 20th Century Contexts. (3 cr; A-F only)
Development of political ideas/ideologies in 20th century. How to understand ideas in various contexts of their production, dissemination, and appropriation. Students read primarily original political/social philosophical texts that have shaped social, cultural, and political landscape.

Hist 3747W. Habsburg Central Europe: 1740-1918. (3 cr)
Evolution of Habsburg rule in Central Europe from reforms of Maria Theresa to imperial collapse in 1918. Economic/social transformation. Revolutions of 1848. Political modernization. Rise of nationalism/anti-Semitism. Fin-de-siecle culture, WWI.

Hist 3748. Austria in the 20th Century. (3 cr)
Austria from Paris Peace Treaties to present. Political instability, social conflict, and economic stagnation between the World Wars. Nazi rule and WWII. Economic miracle, consensus politics, and neutrality after 1945. Austria after Cold War.

Hist 3767. Eastern Orthodoxy: History and Culture. (3 cr)
Development of the orthodox church in Byzantium, the Islamic Near East, the Slavic world and in the diaspora; impact of orthodoxy on political and cultural institutions, interaction with other Christian and non-Christian communities; orthodox spirituality and aesthetics.

Hist 3775. History of the European Jews from the Middle Ages to the Present. (3 cr)
Social, economic, and cultural history of the Jewish people in Europe and their interaction with other peoples; history and causes of anti-Semitism; Zionism and assimilation; Chassidism and socialism.

Hist 3797. History of Silicon Valley. (3 cr; A-F only)
History of birth, idealization, migration, population size, and population characteristics. Evidence from Europe, the United States, and Latin America with comparative material from Africa and Asia. Methods of historical population analysis and research of historical population data.

Hist 3800. Topics in Early American History. (3 cr [max 15 cr])
For advanced undergraduates and majors and non-majors. Focus on intensive exploration of particular topics in early American history such as economic history, demographic regimes, social history, intellectual history, regions, slavery, religion, and witchcraft in colonial America.

Hist 3801. The People of Early America: 16th to 18th Centuries. (3 cr)
Multicultural approach to early American history focusing on the interactions of Africans, Europeans, and American Indians who came together to create a new world in North America during the 16th, 17th, and 18th centuries.

Hist 3809. The Peoples of Revolutionary America. (3 cr)

Hist 3812. The Civil War and Reconstruction. (3 cr)
United States from 1848 to 1877. Causes of sectional crisis; Southern secession and emancipation; military history; impact of war North and South; Reconstruction efforts to change the Southern life and transform the status of African Americans.

Hist 3821. United States in the 20th Century to 1945. (3 cr)
American politics and society in the progressive era, the 1920’s, the Great Depression and World War II. Economic reform at home, the challenges of world war abroad, and social change affecting the status of women and racial minorities.

Hist 3822. United States in the 20th Century Since 1945. (3 cr)
American politics and society in the postwar era, the diplomacy of the Cold War, the civil rights movements, the Vietnam War, cultural clashes in the 1960’s, Watergate, the conservative resurgence and the end of the Cold War.

Hist 3834. Law in American Life, Colonial Era to Civil War. (3 cr; A-F only) Understandings of law/property held by colonists, Indians. Conceptions of relationships among family, community, state held in colonial America; conceptions held today. Law of slavery in colonial era. American Revolution/Constitution. Law, industrialization. Legal legitimacy, federalism, Civil War as constitutional crisis.


Hist 3837. Minnesota History. (3 cr)
Topics in political/social history of Minnesota and its region in nineteenth/ twentieth centuries.

Hist 3841. American Business History. (3 cr)

Hist 3842. History of Silicon Valley. (3 cr; A-F only)
Critical historical examination of birth/development of “Silicon Valley,” the high-tech region around San Jose, California. Myths/ideologies that define Silicon Valley in popular imagination. Deeper history of region. Comparisons with Twin Cities as framework for analysis.

Hist 3844. American Economic History to 1870. (3 cr)


Hist 3845. American Economic History: 1870 to the Present. (3 cr)

Hist 3851. Labor in the 19th-Century United States. (3 cr)
The development of a working class from the preindustrial to an industrial age. Responses of American workers through labor organization, slave resistance, and political reform. The Knights of Labor, the formation of the AFL, and the challenges of Marxism.

Hist 3861. European American; From Immigrants to Ethnics: 1790-1890. (3 cr; A-F only)
Conditions which contributed to the mass exodus from northern/eastern Europe during this century as well as the attraction of the United States. Major theme will be how immigrants shaped and in turn were shaped by America.

Hist 3862. European Americans: 1890-1990. (3 cr; A-F only)
From the 1890s, immigrants came predominantly from southern/eastern Europe. A central theme is the role of immigrants in the transformation of America from a rural agricultural to an urban industrial society.

Hist 3864. African American History: Slavery to Reconstruction. (3 cr)
Importance of dynamics of class, gender, region, and political ideology. Changing nature of race/racism.

Hist 3865. African American History: 1890 to Present. (4 cr; A-F only)
Integral migrations, industrialization, unionization, Great Depression, world wars, large-scale movements for social/political change.

Hist 3870. Topics in American Indian History. (3 cr)
Designed for advanced undergraduates. Topics may include social history, oral history, history of particular regions, political systems, education, and policy.

Hist 3871. American Indian History: Pre-Contact to 1830. (4 cr)
Introduction to American Indian history from ancient Native American peoples and Native American experiences with European colonialism.

Hist 3872. American Indian History: 1830 to the Present. (4 cr)
Focus on the impact of federal Indian policy on American Indian cultures and societies, and on American Indian cultural change.

Hist 3875W. Comparative Race and Ethnicity in U.S. History. (3-4 cr; A-F only. Prereq—# or 4051 or prev coursework in ancient history recommended)
Neolithic through Middle Bronze Age. Interdependent technological/political developments, such as agriculture, state formation, and writing. Use of literature/art as vehicles for articulating concepts. Changing relationships among culture/polities of ancient Near East and regions beyond.

Hist 4051. Ancient Near East and Egypt: Neo- to 1500 BCE. (3 cr; A-F only. Prereq—prev coursework in ancient history recommended)
Lands of Western Asia and Northeast Africa from Neolithic through Middle Bronze Age. Changing relationships among culture/polities of ancient Near East and regions beyond.

Hist 4052. Ancient Near East and Egypt: 1500 to 323 BCE. (3 cr; A-F only. Prereq—4051 or prev coursework in ancient history recommended)
The development of a working class from the preindustrial to an urban industrial age. Responses of American workers through labor organization, slave resistance, and political reform. The Knights of Labor, the formation of the AFL, and the challenges of Marxism.

Hist 4062. History of the Greek World: 400 to 30 B.C. (3 cr)
Trace the history of the Greeks from their initial appearance in Greece in the Bronze Age to the close of the 8th century B.C. Special attention will be devoted to the polis, military development, and intellectual change.

Hist 4071. History of Rome to 78 B.C. (3 cr)
Sulla in 78 B.C. to the death of Trajan in A.D. 117. Special attention will be devoted to the polis, military development, and intellectual change.

Hist 4072. History of Rome: A.D. 117 to 641. (3 cr)
The rise of Macedonia and Alexander the Great, the fragmentation of Alexander’s empire in the Hellenistic World and the eventual Roman take over of that world.

Hist 4135. Vikings, East Slavs, Turks, and Finns: European Russia in the Early Middle Ages. (4 cr; A-F only)
An analysis of the Turkic nomads, East Slavic agriculturalists, and Finnic foragers who inhabited early medieval European Russia and the Khazars, Bulgar, and Rus’/Viking states which came to rule them.

Hist 4136. Reformer, Paranoid, or Divine-Right Monarch: Ivan the Terrible and His Bloody Reign, 1533-1584. (4 cr; A-F only)
Does Tsar Ivan IV (1530-1584) deserve his epithet of Terrible? Examine the various interpretations of Ivan
and critically examine the primary sources for his reign. Attempt to determine Ivan’s guilt in a simulated trial.

Hist 4271. The Viking World: Story, History, and Archaeology. (3 cr)
Viking society and expansion of Viking influence abroad. Viking impact on Western Europe; interactions with Slavic lands; settlement of North Atlantic islands. Western Europe’s impact on Scandinavian lands. Analyzes archaeological, historical, linguistic, and numismatic evidence.

Hist 4272. Medieval Scandinavia: Ideas, Resources, Institutions, and Their History. (3 cr)
Examination of the economic, mental, political, and social contexts of the structures of Scandinavia in the 12th through 15th centuries, as well as of the principal events.

Economic, mental, political, and social landscapes and structures of Scandinavia in the 16th through 18th centuries. Constitutional and institutional developments in the process of state formation. Comparison between Denmark and Sweden for hegemony in Scandinavia and the Baltic.

Hist 4274. Modern Scandinavia: The 19th and 20th Centuries. (3 cr)
Economic, political, and social landscapes and structures of Scandinavia in the 19th and 20th centuries. Emphasis on industrialization, democratization, domestic politics, international relations, the Scandinavian welfare state, and European integration.

Hist 4337. Bill of Rights and the Supreme Court Since 1865. (4 cr; Prereq–Jr or Sr or grad student)
Constitutional, political, philosophical, social context of leading U.S. Supreme Court cases on Bill of Rights. Emphasizes property rights, free speech, freedom of religion, right to bear arms, criminal defendants’ rights, death penalty.

Hist 4431. Seminar: History of Women in South Africa. (3 cr; §Afro 4001)
Changing role/status of women in South Africa from pre-colonial era to present. Relationships to political, social, economic development.

Hist 4521. Proseminar: Nationalism in Japan. (3 cr)
Hist 4522. Proseminar: Racism, Atrocities, Justice in the Pacific War. (3 cr)
Controversies over evidence and interpretation regarding Japanese aggression and war guilt in the Pacific War, including such issues as the responsibility of the Emperor and the American use of atomic weapons.

Hist 4900. Topics in Medieval and Modern European History. (1-4 cr [max 16 cr]; Prereq–Jr or Sr or grad or #)
Selected topics in medieval and modern European history not covered in regular courses. Taught as staffing permits.

Hist 4960. Topics in History. (1-4 cr [max 16 cr]; Prereq–Jr or Sr or grad or #)
Selected topics in history not covered in regular courses. Taught as staffing permits.

Hist 4961W. Major Paper. (4 cr; A-F only; Prereq–A) Required of History majors, usually taken in senior year. Research papers on topics students choose; work largely with primary sources. Faculty guidance in sections limited to 15 stu/sem. Sign up in Undergraduate Studies Office two semesters in advance.

Hist 4970. Historical Internship. (1-12 cr [max 12 cr]; S-N only)
Internship with a historical society, government or community-based historical organization. Arranged through and supervised by the department.

Hist 5011. Quantitative Methods for Historical Research. (4 cr; Prereq–#)
Basics of quantitative historical data collection, measurement, and analysis.

Hist 5035. The Germ Theory and Modern Medicine. (3 cr; Prereq–History of medicine or of science course recommended for undergrads)
A study of the development of the modern germ theory of disease and of its applications in medicine and public health. Emphasis will be placed on developments between 1860 and 1950.

Hist 5045. The Modern Medical Profession. (3 cr; Prereq–History of medicine or of science course recommended for undergrads)
A comparative history of the medical professions in the United States and in select northern European nations. Analyze the process of professionalization and the role the profession has played in western industrial societies since 1800.

Hist 5051. Before Herodotus: History and Historiography of Mesopotamia and the Ancient Near East. (3 cr; Prereq coursework in ancient Near Eastern history recommended)
Historical method/sources for ancient Near Eastern history. Historical traditions. Historiographic texts of Mesopotamia and neighboring regions of the ancient Near East, secondary emphasis on their relationship to works of classical historians such as Herodotus. Use of these sources in modern historiography of ancient Near East.

Hist 5111. Proseminar in the History of Medieval Europe. (3 cr; A-F only; Prereq–Advanced undergrads of exceptional ability or grades, #)
Examination of basic scholarly bibliography for medieval Western European history. Aim is to help students to prepare for M.A. and Ph.D. examinations.

Hist 5115. Medieval Latin Historians. (3 cr; Prereq–Reading knowledge of Latin)
Writing of history in Western Europe during the Middle Ages. Focus on idea of history, philosophy of various historians, techniques of research by medieval historians and chroniclers, history as literature, and value of medieval histories to modern research scholars. Latin texts only.

Hist 5251. Socialist/Post-socialist Transformations. (3 cr; A-F only)
Transformations underway in post-socialist societies of Eastern Europe, former Soviet Union. Ramifications of abandoning state socialism, introduction of market relations. Effect of former system, new market system on cultural institutions/identities.

Hist 5264. Imperial Russia: Formation and Expansion of the Russian Empire in the 18th and 19th Centuries. (3 cr)
Interaction with Europe and Asia; attempts at modernization and reform; emancipation of the serfs and rise of revolutionary movements.

Hist 5265. 20th-Century Russia: The Collapse of Imperial Russia, the Revolutions, and the Soviet Regime. (3 cr)
Analysis of the factors that led to the collapse of the tsarist regime; discussion of the 1917 revolution, the evolution of the Soviet regime and the collapse of Soviet communism. Emphasis on the role of nationalities and the rise of the Commonwealth of independent states.

Hist 5274. Southeastern Europe: Ottoman Empire and Successor States. (3 cr)
The legacy of empires; 18th-century background; rise of Balkan nationalism; the Eastern Questions in the 18th and 19th centuries; the Balkans in the 20th century; population movements or exchanges; ethnic conflict in the Communist and Post-Communist periods.

Hist 5276. Intellectual and Cultural History of Modern Greece. (3 cr)
Literary and cultural contributions of modern Greece. The modern Greek experience seen through Greek historical and cultural monuments. An attempt at self-definition.

Hist 5285. Problems in Historiography and Representation of the Holocaust. (3 cr; Prereq–JWst 3521 or Refs 3521 or A) Issues connected with the Holocaust. Inclusiveness of other groups, Holocaust vs. “Shoa,” historiographical conflicts about perpetrators, problems of representation in literature/art, problems of narrative theory after de Man.

Hist 5294. Social History of Russia and Eastern Europe Through the 19th Century. (3 cr)
Lives of peasants and workers, nobles and merchants. Topics include family, marriage, sexuality; culture and tradition; transformation from an agricultural to a modern society.

Hist 5295. Social History of Russia and Eastern Europe From the Late 19th Century to the Present. (3 cr)
Social movements (revolutionary, nationalistic, women’s), communism, post-communist societies.

Hist 5301. U.S. Women’s Legal History. (3 cr)
Women’s legal status in U.S. history, 1648 to present. Changes in women’s legal status in marriage, divorce, and child custody; reproductive/sexual autonomy; and economic/educational equality. Differences among women based on race, class, and ethnicity.

Hist 5379. Problems in Early American History. (3 cr)
Intensive consideration of topics in early American history. Topics may include readings in race, class, and gender; comparative colonialism; slavery; demography; economic/historical; religion, and regions in the colonial world.

Hist 5381. Minnesota History Workshop. (3-4 cr [max 4 cr]; Prereq–1301, 1302)
A case study and seminar approach to historical research and interpretation. It offers teaching and other scholars a chance to survey a particular topic in Minnesota history and to write their own historical narrative based on primary source research.

Hist 5421. Gender in Latin American History. (3 cr)
Women’s history/masculinity. Gender/colonialism, marriage, sexuality, nationalism, labor, political movements, feminism.

Hist 5436. Social History of African Women: 1850 to the Present. (3 cr; Prereq–# for undergrads)
Explore the historical forces which have shaped African women’s everyday lives and the ways in which these women have been active agents in the making of their own histories.

Hist 5438. Seminar: The African American Experience in South Africa. (3 cr; §Afro 5191)
Ideological, political, religious, and cultural ties that have informed African American and black South African relations from late 18th century to present.

Hist 5446. Problems in West African History. (3 cr; Prereq–# for undergrads)
This problem-centered course explores several of the major historiographical, methodological, and theoretical debates in West African history. Core topics include state formation, trade, slavery, Islam, gender, and colonialism.

Hist 5464. China in the Song, Yuan, and Ming
Course Descriptions

Course Descriptions
reforms of Maria Theresa to imperial collapse. Continuity and change in society; economic and political modernization; the rise of national consciousness and anti-Semitism; politics and culture in the Fin de Siecle; the Empire and World War I.

Hist 5794. Proseminar in European Economic History. (3 cr. Prereq.—#) Europe’s rise in the world economy; England’s industrial revolution and uneven development in Europe; imperialism and World War I; the Great Depression; the post-1945 economic miracle; continuity and change in Eastern Europe.

Hist 5797. Methods of Population History. (3 cr) Standard methods of population analysis with a special focus on methods widely used for historical population research.

Hist 5801. Seminar in Early American History. (3 cr; A-F only) Introduction to the literature of early American history. Readings selected from some of the best scholarship in the field, the questions that now hold the attention of colonial historians, and the theories, methods, and sources they use in pursuit of those questions.

Hist 5821. American History in the Twentieth Century. (3 cr. Prereq.—Grad or #) Intensive readings seminar.

Hist 5841. Proseminar in American Economic History. (3 cr; A-F only. Prereq.—#) Historical literature on American economic and business history from American Revolution to the modern economy.

Hist 5844. U.S. Labor History. (3 cr) Readings in classic and recent approaches to the history of the working class in the United States. Central topics include slavery and free labor, women’s paid and unpaid labor, management strategy, labor protest, and trade union organization.

Hist 5857. Proseminar: Readings in the History of American Women. (3 cr. Prereq.—#) An intensive graduate-level readings course. Survey selected significant topics in historical literature, conceptual frameworks, and methodological problems in the history of American women from 1600 to the present.

Hist 5861. History of American Immigration. (3 cr; A-F only. Prereq.—#) Readings in historical literature on immigration to the United States. Emphasis on recent works distinguished by new research methodologies and interpretations.

Hist 5862. History of American Immigration. (3 cr; A-F only. Prereq.—#) Readings in historical literature on immigration to the United States. Emphasis on recent works distinguished by new research methodologies and interpretations. Each student undertakes an independent reading and/or research project.

Hist 5864. Proseminar: African-American History. (3 cr. Prereq.—#) Readings in African-American history designed for both incoming and advanced graduate students. Structured around various themes and issues including slavery, Reconstruction, the Great Depression, and the civil rights movement.

Hist 5865. Proseminar: African-American History. (3 cr. Prereq.—#) The second half of the graduate sequence in African-American history is oriented primarily toward thinking about and performing independent research.

Hist 5871. Readings in U.S. Intellectual History: 19th-20th Centuries. (3 cr. Prereq.—#) Definitions of American national identity from 1789 to the present as expressed in politics, religion, literature, painting, music, architecture, and history.

Hist 5881. American Foreign Relations to 1895. (3 cr. Prereq.—#) Intensive readings in the historiography of American foreign relations with emphasis on American imperialism, domestic courses of foreign policy, and international political, economic, and cultural relations.

Hist 5882. American Foreign Relations Since 1895. (4 cr. Prereq.—#) Intensive readings in the historiography of American foreign relations with emphasis on American imperialism, domestic courses of foreign policy, and international political, economic, and cultural relations.

Hist 5890. Problems in American Indian History. (3 cr. Prereq.—#) Intensive consideration of topics in American Indian history. Topics may include social history, history of particular regions, political systems, education, and American Indian policy.

Hist 5900. Topics in European/Medieval History. (1-4 cr [max 16 cr]; Prereq.—Grad or [advanced undergrad with #]) Selected topics in European or medieval history not covered in regular courses; taught as staffing permits.

Hist 5901. Latin America Proseminar: Colonial. (3 cr. Prereq.—#) Introduces beginning graduate and advanced undergraduate students to major historical writings on various Latin American themes.

Hist 5902. Latin America Proseminar: Modern. (3 cr. Prereq.—#) Introduces beginning graduate and advanced undergraduate students to major historical writings on various Latin American themes.

Hist 5910. Topics in U.S. History. [1-4 cr [max 16 cr]; Prereq.—Grad or advanced undergrad student with #] Selected topics in U.S. history not covered in regular courses. Taught as staffing permits.

Hist 5920. Topics in African Social History. (3 cr [max 16 cr]; Prereq.—Grad or #) Focuses on the experiences of Africans in their workplaces, households and communities. Detailed treatment of selected historical themes. Topics vary by semester.

Hist 5930. Topics in Ancient History. (1-4 cr [max 16 cr]; A-F only. Prereq.—Grad or #) Selected topics in ancient history not covered in regular courses. To be taught as staffing permits and as enrollment warrants.

Hist 5931. Topics in Comparative Third World History. (3 cr [max 16 cr]; A-F only. Prereq.—Grad student or #) Topics specified in Class Schedule.

Hist 5932. African Historiography and Methodology. (3 cr; A-F only) Recent analysis of several major themes in the historiography of pre-colonial and colonial Africa and the methods used by African historians to reconstruct the African past.

Hist 5933. Seminar in Ancient History. (3 cr; A-F only. Prereq.—Previous coursework in Greek or Roman history, #) Seminar on a selected topic in ancient history.

Hist 5934. Comparative History and Social Theory. (3 cr; A-F only. Prereq.—Grad [or upper-div undergrad] student, #) Focuses on works of history/sociology that are broadly comparative/theoretical and speak to issues of state formation, social movements, social structure, and economic development.

Hist 5940. Topics in Modern Chinese History. (1-4 cr [max 16 cr]; A-F only. Prereq.—#) Possible topics include cultural, economic, intellectual, political, and social history.

Hist 5941. Readings in Chinese Documents. (3 cr. Prereq.—Reading knowledge of Chinese) Readings in Chinese on a topic to be selected by the instructor. Depending on the topic and the time period, readings may involve a mixture of modern and classical Chinese or may be entirely in modern Chinese. Consult instructor for more information.

Hist 5942. Topics in the History of Medicine. (3 cr. Prereq.—Prior history of medicine or history of science course recommended for undergrads) An exploration of topics central to the history of medicine. Emphasis on mid-18th century to the present. Topics vary yearly.

Hist 5950. Topics in Latin American History. (1-4 cr [max 16 cr]; A-F only. Prereq.—Grad or advanced undergrad with #) Selected topics in Latin American history not covered in regular courses. Taught as staffing permits.

Hist 5962. Expansion of Europe. (3 cr; A-F only. Prereq.—Grad student, #) Research proseminar on actions of Europeans in wider world, 1530-1790. Based on documents in James Ford Bell Library.

Hist 5964. Comparative Economic History. (3 cr. Prereq.—#) Theoretical approaches guide cross-cultural examinations of major issues in the economic history of East Asia, Europe, and the New World. Agrarian structures in economic development, markets, the state and economic development, and the industrial revolution.

Hist 5970. Advanced Research in Quantitative History. (4 cr [max 16 cr]) Students will carry out publishable-quality research on a quantitative historical topic.


Hist 5980. Topics in Comparative Women’s History. (3 cr [max 16 cr]) Cross-cultural/thematic explorations in history of women. Topics vary. May include gender and colonialism; women and class formation; women and religion; sexuality; medical construction of gender; women’s narratives as historical sources; gender and politics.

Hist 5993. Directed Study. (1-16 cr [max 16 cr]; A-F only. Prereq.—#, Δ, Ω) Qualified senior and graduate students may register for work on tutorial basis. Guided individual reading or study.

Hist 5994. Directed Research. (1-16 cr [max 16 cr]; A-F only. Prereq.—#, Δ, Ω) Qualified senior and graduate students may register for work on a tutorial basis.

History of Medicine (HMed)

College of Liberal Arts

HMed 3001W. Health Care in History I. (3 cr) Introduction to intellectual/social history of European/American medicine, health care from classical antiquity through 18th century.

HMed 3002W. Health Care in History II. (3 cr) Introduction to intellectual/social history of European/American medicine, health care in 19th/20th centuries.

HMed 3055. Women, Health, and History. (3 cr) Women’s historical roles as healers, patients, research subjects, health activists. Biological determinism, reproduction, mental health, nursing,
women physicians, public health reformers, alternative practitioners. Gender disparities in diagnosis, treatment, research, careers. Assignments allow students to explore individual interests.

HMed 5002. Public Health Issues in Historical Perspective. (3 cr) Introduction to the evolution of major recurring problems and issues in public health including environment, health food customs and nutrition, control of alcohol and drugs, venereal diseases and public policy, human resources regulation, and relationship of science to promotion of health.


HMed 5055. Women, Health, and History. (3 cr, Preq--Grad student or jr or sr with prev coursework in hist or #) Women's historical roles as healers, patients, research subjects, health activists. Biological determinism, reproduction, mental health, nursing, women physicians, public health reformers, alternative practitioners. Gender disparities in diagnosis, treatment, research, careers. Assignments allow students to explore individual interests.

HMed 5200. Early History of Medicine to 1700. (3 cr; A-F only) An introductory survey of the history of medicine in Europe and America.

HMed 5201. History of Medicine from 1700 to 1900. (3 cr Preq--HMed 5-200) An introductory survey of the history of medicine in Europe and America.

HMed 5210. Seminar: Theories and Methods in Medical History. (3 cr; A-F only) Historiography of the history of medicine.

HMed 5211. Seminar: Theories and Methods in Medical History. (3 cr; A-F only Prereq--5210) Use of archives, primary sources. Supervised research project.

HMed 5940. Topics in the History of Medicine. (3 cr) Seminar on the historical relations between medicine and the State from the 18th to 20th centuries.

### History of Science and Technology (HSci)

#### College of Liberal Arts

**HSci 1714. Technology and Western Civilization: To the Industrial Revolution. (4 cr S3714) History of technology in its cultural context from earliest times to the Industrial Revolution. Neolithic Revolution, Bronze and Iron Ages, ancient civilizations, Greece, Rome, Middle Ages, and Renaissance.**

**HSci 1715. Technology and Western Civilization: Since the Industrial Revolution. (4 cr S3715) Relations of technology to culture since Industrial Revolution. Diffusion of Industrial Revolution, modes of adaptation by different cultures, and social impact.**

**HSci 1814. Introduction to History of Science: Ancient Science to the Scientific Revolution. (4 cr S3814) Development and changing nature of the sciences are placed in their cultural context. Babylonian and Greek science; decline and transmission of Greek science; Scientific Revolution (1500-1700) from Copernicus to Newton.**

**HSci 1815. Introduction to History of Science: Modern Science. (4 cr §3815) Development and changing nature of the sciences are placed in their cultural context. Newton and new mechanics; new chemistry; light; Darwin and species; new experimental biology; atomic and nuclear physics; relationships among science, technology, society, and politics.**

**HSci 1905. Freshman Seminar. (2 cr; A-F only. Prereq--Fr with no more than 24 cr) Topics vary. See Class Schedule.**

**HSci 3211. Biology and Culture in the 19th and 20th Centuries. (3 cr §5211) Changing conceptions of life and aims and methods of biology; changing relationships between biology and the physical and social sciences; broader intellectual and cultural dimensions of developments in biology.**


**HSci 3244. History of Ecology and Environmentalism. (3 cr §5244) Development of ecological thought from 18th century natural theology to contemporary ecology and conservation biology; changing views of the ‘balance’ and the ‘order’ of nature; conceptual and methodological developments in ecosystems ecology; connections between ecology and conservation, and between population and environmental politics.**

**HSci 3331. Technology and American Culture. (3 cr §5331) Development of American technology in its cultural and intellectual context from 1790 to present. Technology of Native Americans; transfer of technology to America; establishment of an infrastructure promoting economic growth; and social response to technological developments.**

**HSci 3332. Science and American Culture. (3 cr §5332) Development of American science, including transfer of science to America; development of indigenous traditions for pursuit of science; establishment of infrastructure for education and research; response of public to scientific development.**

**HSci 3333V. Honors Course: Issues in Twentieth Century American Science. (3 cr) Historical approach to understanding science and technology, emphasizing intellectual, political, and social contexts; decision-making by practitioners on issues of importance to the profession and the community; and topics relating to popular science, science, and warfare.**

**HSci 3401. Ethics in Science and Technology. (3 cr §5401) Historical issues involving research ethics (e.g., human experiments and environmental, nuclear, and safety issues).**

**HSci 3714. Technology and Western Civilization: To the Industrial Revolution. (4 cr §5174) History of technology in its cultural context from earliest times to the Industrial Revolution. Neolithic Revolution, Bronze and Iron Ages, ancient civilizations, Greece, Rome, Middle Ages, and Renaissance.**

**HSci 3715. Technology and Western Civilization: Since the Industrial Revolution. (4 cr §5175) Relations of technology to culture since Industrial Revolution. Diffusion of Industrial Revolution, modes of adaptation by different cultures, and social impact.**

**HSci 3814. Introduction to History of Science: Ancient Science to the Scientific Revolution. (4 cr §5184) Development and changing nature of the sciences are placed in their cultural context. Babylonian and Greek science; decline and transmission of Greek science; Scientific Revolution (1500-1700) from Copernicus to Newton.**
Comparative reception of Darwinism in different countries/cultures.

**HSci 5244. History of Ecology and Environmentalism.** (3 cr; S3344)
Development of ecological thought from 18th century natural theology to contemporary ecology and conservation biology; changing views of “balance” and the “economy” of nature; conceptual and methodological developments in ecosystems; connections between ecology and conservation, population and environmental politics.

**HSci 5331. Technology and American Culture.** (3 cr; S3331)
Development of American technology in its cultural and intellectual context from 1790 to present. Technology of Native Americans; transfer of technology to America; establishment of an infrastructure promoting economic growth; and social response to technological developments.

**HSci 5332. Science and American Culture.** (3 cr; S3332)
Development of American science, including transfer of science to America; development of indigenous traditions for pursuit of science; establishment of infrastructure for education and research; response of public to scientific development.

**HSci 5401. Ethics in Science and Technology.** (3 cr; S3401)
Historical issues involving research ethics (e.g., human experiments and environmental, nuclear, and safety issues).

**HSci 5993. Directed Studies.** (1-15 cr [max 15 cr])
Guided individual reading or study.

**HSci 5994. Directed Research.** (1-15 cr [max 15 cr])
Additional research related to seminar topic.

**Hmong (Hmng) Department of Asian Languages and Literatures College of Liberal Arts**

**Hmng 1015. Accelerated Beginning Hmong.** (5 cr. Prereq–Ability in basic spoken Hmong)
Review of grammar/usage, practice in reading/writing. Introduction to Hmong literature and formal writing. Topics in Hmong culture.

**Hmng 1016. Accelerated Intermediate Hmong.** (5 cr. Prereq–1015, ability in basic spoken Hmong)
Review of grammar/usage, continued practice in reading/writing. Expanded introduction to Hmong literature and formal writing. Selected topics in Hmong culture.

**Honors Colloquia (HCol) CLA Honors Program College of Liberal Arts**

**HCol 1001H. Honors Colloquium: Introduction to the Arts and Sciences.** (1 cr; S-N only. Prereq–1st term f, honors)
Introduction to problems these disciplines address, methods they use. Discussions led by faculty representing various disciplines.

**HCol 1010H, 1020H, 1030H, 1040H, 1050H, 1060, 1070, 1080, 1090, 1110V, 1120, 1130, 1140. Honors Colloquium.** (1-3 cr [max 12 cr]. Prereq–Fr or soph, honors, A. D.)
Special topics. Discussions, active learning. Often interdisciplinary.

**HCol 1093. Directed Studies.** (1-4 cr [max 16 cr]. Prereq–[Fr or soph], honors, A. D.)
For additional research related to a colloquium topic.

**Horticulural Science (Hort) Department of Horticultural Science College of Agricultural, Food and Environmental Sciences**

**Hort 1001. Plant Propagation.** (4 cr)
Principles and techniques of propagating plants by seeds, cuttings, grafts, buds, layers, and division. Lectures on principles; labs on practice of various propagating techniques.

**Hort 1002. Home Horticulture.** (3 cr. Prereq–Non-horticulture majors)
Fundamental concepts of plant identification, growth, and culture with practical applications to home landscape, floral design, house plants, fruit, flower, and vegetable gardening.

**Hort 1003. Master Gardener Core Course: Horticulture for Home and Garden.** (3 cr)
Foundation in soils; botany; entomology; plant pathology; indoor, herbaceous, and woof plants; lawn fruits/vegetables; pesticides; wildlife. Emphasizes extension publications/resources useful in answering consumer horticulture questions.

**Hort 1011. Herbaceous Landscape Plants.** (4 cr)
Taxonomy, identification, ecology, and landscape uses of annuals, perennials, wildflowers, ferns, tender/hardy bulbs, and tropicals/sub-tropicals used in interior landscapes.

**Hort 1012. Woody Landscape Plants.** (4 cr)
Taxonomy, identification, ecology, and landscape uses of trees, shrubs, vines, groundcovers, and evergreens. Lecture and lab.

**Hort 1013. Floral Design.** (2 cr)

**Hort 3002. Greenhouse Management.** (3 cr; A-F only. Prereq–1001)

**Hort 3005. Environmental Effects on Horticultural Crops.** (4 cr; A-F only. Prereq–1001, Biol 3002, Biol 3005, Chem 1021 or equiv) or #
Effects of environment on plant growth/physiology. How horticulturists manipulate environment to produce high quality plants.

**Hort 3018. Landscape Operations.** (2 cr. Prereq–1001 or #)
Demonstration/hands-on experience with landscape operations. Planting, mulching, staking, pruning, fertilizing, large tree care, seeding, sodding, aerifying, calibrating, irrigating, surveying. Discussion/laboratory. Team taught by faculty, staff, and industry professionals.

**Hort 3090. Horticultural Practicum.** (2-4 cr [max 12 cr]. Prereq–Fr or so or Hort major, #)
Approved field, laboratory, or greenhouse experiences in application of horticultural information and practices.

**Hort 4021. Landscape Design, Implementation, and Management I.** (4 cr. Prereq–1001, 1011, 1012)
Based on philosophy of sustainable landscape theory and practice. Emphasis on sustainability to all phases of landscape development. Lab includes design, implementation, and management of actual landscape.

**Hort 4041. Nursery Production and Management I.** (4 cr. A-F only. Prereq–1001, 1012 or #)
Production, maintenance, and marketing of woody ornamental plants. Establishment/management of nursery or garden centers. Lab, field trips.

**Hort 4041W. Nursery Production and Management I.** (4 cr. A-F only. Prereq–1001, 1012 or #)
Production, maintenance, and marketing of woody ornamental plants. Establishment/management of nursery or garden centers. Lab, field trips.

**Hort 4051. Potted Plant Production.** (4 cr. Prereq–1001, 1011, 3002, #)
Problem-solving and management practices for propagation, production, and use of floral crops. Emphasizes potted plants, hydroponics. Growing, marketing, and using floral crops to modify the environment. Lecture, lab, field trips.

**Hort 4061. Turf and Landscape Management.** (3 cr. Prereq–1001, Soil 2125)
Biology of turfgrasses and ecology of landscape systems. Turfgrass installation, management, and culture of turfgrass communities and landscape plant systems. Seed production, industrial grounds, general lawn care, park and recreation areas, and athletic field management. Business management and decision making programs considered. Problem solving and case studies.

**Hort 4071. Applications of Biotechnology to Plant Improvement.** (4 cr. Prereq–Chem 1011 or 1021, GCB 3022 or equiv)
Fundamentals of plant molecular biology and biotechnology with emphasis on their applications to plant propagation and crop improvement. Lab includes plant tissue culture, gel electrophoresis, and other techniques of plant molecular biology.

**Hort 4072. Growing Plants Organically: What It Means To Be Green.** (3 cr. Prereq–1001 or Biol 2022 or Plbo 3xxx or equiv, jr or sr or #)
Science and ethics of organic cultivation. What is meant by “green” from a legal, scientific, and ethical perspective? Explore original literature on an organic practice, prepare a written report, and lead a class discussion.

**Hort 4096. Professional Experience Program: Internship.** (1-3 cr [max 6 cr]; S-N only. Prereq–COAFES undergrad, #, complete internship contract available in COAFES Career Services before registering)
Professional experience in horticulture firms or government agencies attained through supervised practical experience; evaluate reports, consultations with faculty advisers and employers.

**Hort 4401. Plant Genetics and Breeding.** (4 cr. S-Agro 4401, Prereq–Biol 1009 or equiv or grad, #)
Principles of plant genetics and environmental variation. Applications of genetics to crop evolution and breeding of self-pollinated, cross-pollinated, and asexually propagated crops. Lab experiments investigate hybridization, variation, and selection.

**Hort 5007. Advanced Plant Propagation.** (3 cr. Prereq–1001)

**Hort 5018. Landscape Operations.** (3 cr. Prereq–1001 or #)
Demonstration/hands-on experiences with landscape operations. Planting, mulching, staking, pruning, fertilizing, large tree care, seeding, sodding, aerifying, calibrating, irrigating, surveying. Written
report on special project or experiment. Discussion/ laboratory. Team taught by faculty, staff, and industry professionals.

Hort 5022. Topics in Plant Science for Teachers. (1-4 cr; Prereq–Biol 2012 or equiv or ed course; no cr for Hort major or grad student)

Hort 5023. Public Garden Management. (2 cr; Prereq–#)

Hort 5024. Landscape Development. (1 cr; A-F only. Prereq–5021 or #)
Hands-on experience in landscape development. Plan takeoffs, site evaluation/preparation, planting, installation/construction, equipment operation, hard-good/plant handling.

Hort 5031. Sustainable Fruit Production Systems. (2 cr; A-F only. Prereq–5001, 5005)
Principles of fruit production. Emphasizes temperature fruit crops. Integrated management of fruit cropping systems, including site selection, cultural management practices, taxonomic classification, physiological/environmental/economic control of plant development. Integration of writing into understanding various fruit cropping systems.

Hort 5032. Sustainable Commercial Vegetable Production Systems. (3 cr; A-F only. Prereq–3005, Ent 3005, PFPa 2001, Soil 2125 or #)
Principles of commercial vegetable production. Integrated management of vegetable cropping systems. Site selection/environment, seed/stand establishment, cultural management practices, commodity use, handling from harvest to market. Perspectives on types of vegetable cultivars. Origin, historical significance/improvement through breeding, nutrition/medicinal aspects, physiological/environmental control of development.

Hort 5041. Nursery Production and Management II. (3 cr; A-F only. Prereq–4041)
In-depth look at nursery practices, including innovative production systems. Specific crop schedules, using technical and economic data for production. Pest management and regulations for the nursery industry.

Hort 5051. Bedding Plant and Specialty Annual/ Perennial Crop Production. (4 cr; A-F only. Prereq–1001, 1011, 3002)

Hort 5052. Cut Flower Production. (3 cr; A-F only. Prereq–1001, 1011, 3002)

Hort 5061. Turfgrass Science. (3 cr; Prereq–4061)
For advanced students in turf with career objectives in professional turf management. Emphasis on ecology, physiology, and theory of turf population dynamics and specialized management situations such as golf course, commercial sod production, and fine turf athletic settings.

Hort 5071. Restoration and Reclamation Ecology. (3 cr; Prereq–Biol 2012 or Biol 3002, Biol 1001 or Biol 3407 or equiv or #)
Ecological and physiological concepts as a basis for revegetation of grasslands, wetlands, forests, and other landscapes. Plant selection, stand establishment, evaluating revegetation success. State and federal programs that administer restoration and reclamation programs. Field trips within Minnesota. Hort 5090. Directed Studies. (1-6 cr; max 18 cr)
Prereq–8 cr upper div Hort courses, #)
In-depth exploration of concepts, technology, materials, or programs in specific area to expand professional competency and self-confidence. Planning, organizing, implementing, and evaluating knowledge obtained from formal education and from experience.

Human Ecology (HE)

College of Human Ecology

HE 1200F. First-Year Honors Colloquium. (1-2 cr; max 4 cr; A-F only, Prereq–CHE honors)
Diverse ways of knowing about world, fields of study organized to understand human environment, their place within academic/career pathways that cross within intellectual traditions/professional fields.

HE 1902. Freshman Seminar: Cultural Diversity. (1-3 cr [max 6 cr]; A-F only. Prereq–Fr)
Issues related to human ecology disciplines and cultural diversity. Topics announced in advance. Small-group seminar.

HE 1903. Freshman Seminar. (1-3 cr [max 6 cr]; A-F only. Prereq–Fr)
Development of two/three-dimensional models that explore concepts of ethics/citizenship. Emphasizes visualization as tool for understanding/communicating complex relationships.

HE 1904. Freshman Seminar. (1-3 cr [max 6 cr]; A-F only. Prereq–Fr)
Issues related to human ecology disciplines and international perspectives. At least 1/3 of course material on societies outside the United States. Topics announced in advance. Small-group seminar.

HE 1910W. Freshman Seminar. (1-3 cr [max 6 cr]; A-F only. Prereq–Fr)

HE 3201. Strategic Career Planning. (1 cr; A-F only. Prereq–Jo or sr or at least 60 cr)
Students research career opportunities related to retail industry, set career objectives based on an assessment of individual skills/interests, and identify job search skills to implement a transition from college to employment.

HE 4140. Special Topics in Human Ecology. (1-4 cr [max 12 cr]; A-F only. Prereq–#)
In-depth study of a selected topic.

HE 4150H. Honors Seminar. (1-3 cr [max 6 cr]; Prereq–Honors; CHE students must take A-F) Topics specified in Class Schedule.

HE 4160H. Honors Capstone Project. (2 cr [max 4 cr]; A-F only. Prereq–Heck honors; A-F only)
Individualizes the honors experience by connecting aspects of major program with special academic interests.

Human Resource Development (HRD)

Department of Work, Community, and Family Education

College of Education and Human Development

HRD 3601. Student and Trainee Assessment. (2 cr; A-F only)
Development of tests of knowledge, affect, and processes for programs focused on instruction of skills associated with business/industry. Development of learning progress reporting systems. Evaluation of instructional effectiveness. Application of tests and other evaluation instruments to assess/
Designing, creating, and presenting information using multimedia resources in business settings.

HRD 5629. Course Development in Business and Industry: Advanced. (2 cr; A-F only)
Designing instructional programs/courses that help learners develop desired competence. Designing instruction for performance based training and vocational/technical education. Developing course syllabus consistent with course expectations. Developing academic/community-based elements that complement course goals. Reflect on and compare performance-based instruction with other curriculum models for the field.

HRD 5661. Instructional Methods in Business and Industry/Education/Innovative. (2 cr)
Theory/practice in instructional methods for career/technical education (CTE) instructors and human resources/development (HRD) professionals. How to select various teaching methods and plan for their delivery. Preparing an instructional methods plan to clarify course content, teaching methods selected, rationale for their selection, and how a student organization might facilitate student learning.

HRD 5662. Computer Training in School and Industry Settings. (2 cr; Prereq–BIE 5101 or equiv)
Alternative practices for teaching business applications software use—such as word processors, spreadsheets, graphics software, desktop publishing software, data communications software—in both public school and industry settings.

HRD 5770. Special Topics in Human Resource Development. (1-4 cr; max 12 cr)
Exploration of issues, methods, and knowledge in HRD areas. Topics vary.

HRD 5802. Education and Human Resource Development Through Tourism. (3 cr; A-F only)
Policies/practices of education and human resource development in tourism industry.

Nature of diverse populations and their unique learning and training needs, exemplary programs, and collaborative efforts among persons representing work, community, and family settings.

HRD 5822. Diversity and Organizational Transformation in Education, Work, and Community. (2 cr)
Develop models for understanding the impact of diversity on individual, organizational, and community outcomes. Discuss organizational change in relation to diversity.

Human Resources and Industrial Relations (HRIR)

Industrial Relations Center
Curtis L. Carlson School of Management

HRIR 3021. Human Resource Management and Industrial Relations. (3 cr; Prereq–1102, Econ 1101, Psy 1001, 50 cr)

HRIR 3024. Governing the Workplace: Comparative Perspectives. (2 cr)
An international comparison of who is allowed to make the rules governing employment relationship. Study of alternative models/systems (e.g., business, government, employees, unions, market forces, mixed models) in the context of the U.S. and other countries. Exploration of models for the future.

HRIR 3031. Staffing and Selection: Strategic and Operational Concerns. (2 cr; Prereq–[At least 50 sem cr or 75 qtr cr], 2.00 GPA or A)

HRIR 3032. Training and Development. (2 cr; Prereq–[At least 50 sem cr or 75 qtr cr], 2.00 GPA or A)
Introduction to theory/practice of training/implementation/evaluation of employee training/development programs. Training as process for influencing individual/organizational outcomes (e.g., performance, job satisfaction, work climate).

HRIR 3041. The Individual in the Organization. (2 cr)
Focus on factors influencing individual work performance. Includes motivation, perceptual differences, career choice, psychological contracts, assumptions about workers/work, leadership/management, learning/skill development, openness to change. Examines evidence on current trends.

HRIR 3042. The Individual and Organizational Performance. (2 cr)
Factors influencing group, team, and organizational performance. Examines systems that drive organizational success. Topics include job design and organization structure, organization effectiveness measures, culture, group dynamics, teamwork, power and influence.

HRIR 3051. Compensation: Theory and Practice. (2 cr; Prereq–[At least 50 sem cr or 75 qtr cr], 2.00 GPA or A)
Introduction to compensation/reward programs in employing organizations. Theories of organizational/employee behavior used in design/implementation of pay programs. Design, implementation, and evaluation of job evaluation, salary surveys, skill-based pay, merit-based pay, and other compensation programs.

HRIR 3071. Union Organizing and Labor Relations. (2 cr)
Analysis of labor unions, employee associations, and collective bargaining within the framework of contemporary American legislation and policy. Covers forming/organizing labor unions; union, employee, and management strategies and responsibilities, historical influences on policy and practice in the private and public sectors.

HRIR 3072. Collective Bargaining and Dispute Resolution. (2 cr)
Collective bargaining, contract administration, grievance processing, interest/Arbitration, strikes and related policies and practices of employers, workers, and labor unions in dealing with worker representation in the private and public sectors. Impact and transfer of practices to the non-union sector are considered.

HRIR 5000. Topics in Human Resources and Industrial Relations. (1-8 cr)
Selected topics of current relevance to human resource management and industrial relations.

HRIR 5021. Systems of Conflict and Dispute Resolution. (4 cr)
Introduction to theoretical and practical treatment of conflict settlement in interpersonal, work-related, community, business, and international settings. Lectures, discussions, observations of actual dispute resolution sessions, and lab exercises with students participating in dispute resolution simulations applied to real world conflicts.

HRIR 5022. Managing Diversity. (2 cr; Prereq–[At least 50 sem cr or 75 qtr cr], 2.00 GPA or grad student or A)
Ways to effectively manage increasingly diverse workforce. Human resource practices examined with respect to diversity. How to incorporate diversity into decision making to enhance organizational performance.

HRIR 5023. Personnel and Industrial Relations Law. (2 cr; Prereq–[At least 50 sem cr or 75 qtr cr], 2.00 GPA) or grad student or A
Growing body of laws and their application to
workplace: human rights, equal employment, compensation/benefit, employee protection, labor relations, Special issues (e.g., wrongful discharge, sexual harassment, defamation) discussed in context of statute, case law, and their application to work setting.

HRIR 5024. Employee Performance: Appraisal and Management. (2 cr. Prereq--[At least 50 sem cr or 75 tired cr], 2.00 GPA] or grad student or A-F only) How employee performance is organized, appraised, and managed to achieve organizational/individual performance goals. Job design standards, employee appraisal systems, worker satisfaction.


HRIR 3991. Independent Study in Human Resources and Industrial Relations. (1-8 cr. Prereq--A or #) Individual readings or research topics.

Humanities (Hum) Department of Humanities College of Liberal Arts

Hum 1001. Humanities in the West I. (4 cr. §3001) Greek and Roman civilization, rise of Christianity. Epic and lyric poetry, drama, architecture, sculpture, philosophy religion. Integrative study of works by creative figures such as Homer, Herodotus, Aeschylus, Sophocles, Euripides, Aristotle, Plato, Aristotle. Caesar, Lucretius Virgil, Ovid, Petronius, Augustine, Boethius.


Hum 1004. Humanities in the West IV. (3 cr. §3004) Eighteenth-century Europe. Old Regime through French Revolution and Napoleon; new science, Enlightenment, cult of sensibility; art, music. Integrative study of works by creative figures such as Voltaire, Rousseau, Diderot, Goethe, Watteau, Boucher, Hogarth, David, Goya, Mozart, Haydn.


Hum 199W. Freshman Seminar. (3 cr. max 6 cr.) A-F only) Topics specified in Class Schedule.

Hum 3001. Humanities in the West I. (4 cr. §1001) Greek and Roman civilization, rise of Christianity. Epic and lyric poetry, drama, architecture, sculpture, philosophy religion. Integrative study of works by creative figures such as Homer, Herodotus, Aeschylus, Sophocles, Euripides, Aristophanes, Plato, Aristotle. Caesar, Lucretius Virgil, Ovid, Petronius, Augustine, Boethius.


Hum 3003. Humanities in the West III. (4 cr. §1003) European civilization from 15th through 17th century. Religious/cultural reaction in northern Europe. Humanism. Counter-Reformation, religious wars. New science, philosophy, Literature, art, music. Works by creative figures such as Petrarch, Machiavelli, Erasmus, Luther, Cervantes, Descartes, Moi, Michelangelo, Bernini, Rembrandt, Josquin, Bach.

Hum 3004. Humanities in the West IV. (3 cr. §1004) Eighteenth-century Europe. Old Regime through French Revolution and Napoleon; new science, Enlightenment, cult of sensibility; art, music. Integrative study of works by creative figures such as Voltaire, Rousseau, Diderot, Goethe, Watteau, Boucher, Hogarth, David, Goya, Mozart, Haydn.


Hum 3021. Introduction to the Historical Foundations of Modern Education. (3 cr. §4021, §EDPA 3021, §EDPA 5021) Analysis and interpretation of important elements in modern education derived from pre-classical sources, the Greeks, Romans, Middle Ages, Renaissance, Reform, Enlightenment, and Industrial Revolution. Basic background course.

Hum 3022. Introduction to the History of Western Educational Thought. (3 cr. §4023, §EDPA 3023, §EDPA 5023) Great educational classics of Western civilization by: Plato, Aristotle, Quintilian, Montaigue, Milton, Locke, Rousseau, and others.

Hum 3027. Lyric Song in Medieval Culture. (3 cr.) Courtly, paratigraphical, and popular song traditions, 1100-1500, in specific contexts: castle, palace, monastery, nunnerie, cathedral, theater, tavern, street and countryside. Social roles of men and women as patrons, performers, poets, composers. Writing historical narratives and recreating medieval performance traditions.

Hum 3029. Music in the Twentieth Century. (3 cr.) Surveys music in European and American culture from 1890s to present. Emphasizes interactions between high art, popular and ethnic musics, contributions of men and women as composers and performers, concurrent developments in the arts, dance, and literature, music as social commentary.


Hum 3281. European Intellectual History: the 18th and 19th Centuries. (3 cr.) First of a two-semester course dealing with logical, philosophical and methodological issues in the historical, social and natural sciences. The period covered is from the late seventeenth century to the mid-nineteenth.

Hum 3282. European Intellectual History: the Late 19th and 20th Centuries. (3 cr.) Second and concluding semester of readings in fundamental texts dealing with issues in logic, philosophy and the methodologies of the historical, social and natural sciences, from the late nineteenth century to the present. There is no text. Readings are from original sources.

Hum 3635. Hinduism: From Gupsa to 13th Century. (2 cr.) Development of classical Hinduism in its multiple cultural and social manifestations, from the 4th to 13th century C.E. Art, religion, mythlogy, literature, philosophy, caste system.

Hum 3677. Self-Realization in 20th-Century Western Literature. (2 cr.) Quest for meaning and process of individuation. Works by Conrad, Kate Chopin, Joyce, Sarre, Hesse.

Hum 3910. Topics in the Humanities. (2-4 cr. Prereq--jr or sr or #) Topics vary by offering.

Hum 3920. Honors Course: Topics in the Humanities. (2-4 cr. Prereq--jr or sr or #) Topics will vary from offering to offering, and will be specified in Class Schedule.

Hum 3970. Directed Studies. (1-4 cr. Prereq--#) Guided individual reading or study.

Hum 3971. Directed Studies. (1-4 cr. Prereq--#) Guided individual reading or study.
Topics vary by offering.
Hum 4920. Honors Course: Topics in the Humanities. (2-4 cr. Prereq–Jr or Sr or Grad)
Topics will vary from offering to offering and will be specified in Class Schedule.
Hum 4970. Directed Studies. (1-4 cr. Prereq–Jr or Sr or Grad, #)
Guided individual reading or study.
Hum 4971. Honors Course: Directed Studies. (1-4 cr. Prereq–Jr or Sr or Grad, #)
Guided individual reading or study.

Industrial Engineering (IE)
Department of Mechanical Engineering
Institute of Technology

IE 3041. Industrial Assignment I. (2 cr; A-F only. Prereq–ME upper division, registration in ME co-op program)
Industrial work assignment in engineering intern program. Evaluation based on student’s formal written report covering semester’s work assignment.
IE 4042. Industrial Assignment II. (2 cr; A-F only. Prereq–ME upper div, registration in ME co-op program)
Industrial work assignment in engineering intern program. Evaluation based on student’s formal written report.
IE 4043. Industrial Assignment III. (4 cr; A-F only. Prereq–4042)
Solution of system design problems that require developing criteria, evaluating alternatives, and generating a preliminary design. Final report emphasizes design communication and describes design decision process, analysis, and final recommendations.
IE 4521. Statistics, Quality, and Reliability. (4 cr. Prereq–Upper div or grad student or CNR)
Random variables/probability distributions, statistical sampling/measurement, statistical inferencing, confidence intervals, hypothesis testing, single/multivariate regression, design of experiments, statistical quality control, quality management, reliability, maintainability, availability.
IE 5080. Topics in Industrial Engineering. (4 cr. Prereq–Upper div or grad student)
Topics vary each semester.
IE 5441. Engineering Cost Accounting and Cost Control. (4 cr; A-F only, Prereq–Upper div II or grad student)
IE 5511. Human Factors and Work Analysis. (4 cr; A-F only; Prereq–Upper div II or grad student)
Human factors engineering (ergonomics), methods engineering, and work measurement. Human-machine interface: displays, controls, instrument layout, and supervisory control. Anthropometry, work physiology and biomechanics. Work environmental factors: noise, illumination, toxicology. Methods engineering, including operations analysis, motion study, and time standards.
IE 5512. Applied Ergonomics. (4 cr; A-F only; Prereq–Upper div II or grad student, 5511)
Small groups of students work on practical ergonomic problems in local industrial firms. Projects cover a variety of ergonomic issues: workstation design, equipment and tool design, back injuries and material handling, cumulative trauma disorders, illumination and noise, and safety.
IE 5513. Engineering Safety. (4 cr; A-F only, Prereq–Upper div II or grad student)
Occupational, health, and product safety. Standards, laws, and regulations. Techniques and engineering control, including general principles, tools and machines, mechanics and structures, electrical safety, materials handling, fire safety, and chemicals. Human behavior and safety, procedures and training, warnings and instructions.
IE 5522. Quality Engineering and Reliability. (4 cr. Prereq.–[4521 or equiv.], [upper div or grad student or CNR])
Quality engineering/management, economics of quality, statistical process control design of experiments, reliability, maintainability, availability.
IE 5531. Engineering Optimization I. (4 cr. Prereq–Upper div or grad student or CNR)
Linear programming, simplex method, duality theory, sensitivity analysis, interior point methods, integer programming, branch/bound/dynamic programming. Emphasizes applications in production/logistics, including resource allocation, transportation, facility location, networks/flows, scheduling, production planning.
IE 5541. Project Management. (4 cr. Prereq–Upper div or grad student)
Project selection/screening, multiple-criteria methods for project evaluation, project structuring/work breakdown, project teams, project scheduling, resource management, life-cycle costing, project control, project termination, research/development projects, computer support for project management.
IE 5545. Decision Analysis. (4 cr. Prereq–4521 or equiv)
Normative theories of decision making. Emphasizes structuring of hard decision problems arising in business and public policy contexts. Decision trees, expected utility theory, screening prospects by dominance, assessment of subjective probability, multiple attribute utility, analytic hierarchy process, benchmarking with data and model analysis, basics of game theory.
IE 5551. Production Planning and Inventory Control. (4 cr. Prereq–CNR or upper div or grad student)
Inventory control, supply chain management, demand forecasting, capacity planning, aggregate production and material requirement planning, operations scheduling, and shop floor control. Quantitative models used to support decisions. Implications of emerging information technologies and of electronic commerce for supply chain management and factory operation.
IE 5552. Design and Analysis of Manufacturing Systems. (4 cr. Prereq–Upper div or grad student)
Flow lines, assembly systems, cellular manufacturing systems, and flexible manufacturing systems. Emphasis is on methodologies for modeling, analysis and optimization. Lead time analysis, capacity and workload allocation, scheduling and shop floor control, work-in-process management, facilities planning and layout, and information management.
IE 5553. Simulation. (4 cr. Prereq–CNR or upper div or grad student)

Information and Decision Sciences (IDSc)
Department of Information and Decision Sciences
Curtis L. Carlson School of Management
IDSc 3001. Information Systems for Business Processes and Management. (3 cr; A-F only. Prereq–
[BA 1001 or experience using Windows/Internet, 50 cr)]
IDSc 3201. Information Systems Application Development. (4 cr; A-F only. Prereq–3001, MIS major)
User interface design and development, database design and querying, operating environments. Introduction to programming and program design. Hands-on experience with selected application system development tools. Follows the systems development experience from design and construction through testing and deployment.
IDSc 3202. Analytical Skills for Business Application Development. (4 cr; A-F only. Prereq–3001)
Concepts/methods for business process engineering and systems analysis. Techniques, activities, and issues for management/control of systems development at project level. Traditional and object-oriented analysis.
IDSc 4102. Introduction to Information Systems Analysis. (3 cr; A-F only. Prereq–3001)
Life cycle for development of an information system application. Standards, tools, and techniques required in analysis of information and systems and in logical information systems design. Processing alternative approaches to systems design.
IDSc 4103. Database Design, Manipulation, and Management. (3 cr; A-F only. Prereq–3001)
Use of computer technology and software to represent, manipulate, and manage data. Facilities for ad hoc interactive use and system development. Principles and techniques of logical database design. Introduction to physical representation and storage of data. DBMS tools to manage data and high-level languages to retrieve and manipulate data.
IDSc 4131. Advanced Database Design and Administration. (3 cr; A-F only. Prereq–4103)
Role, organization, functions, and tools of data administration. Data planning and information architectures. Object-oriented DBMS and support for graphics and CAD/CAM applications. Data security, maintaining database integrity, and managing data shared, networked or distributed environment. Strategies for using advanced DBMS tools and CASE tools.
IDSc 4151. Data Communications Systems. (3 cr; A-F only. Prereq–4102)
Characteristics of transmission facilities and networks, concentrators and multiplexers, terminals, modems, and front-end network interfaces. Control hardware and software systems. The role of data communications in management information systems.
IDSc 4153. Telecommunications: Domestic and International Policy and Regulation. (3 cr; A-F only. Prereq–3001)
IDSc 4203. Information Technology Infrastructure. (4 cr; A-F only. Prereq–3202)
Technology and infrastructure for developing large-scale information systems. Processes to identify, evaluate, and select appropriate infrastructure components for an information system implementation. Application of systems analysis and design techniques in a class project.
IDSc 4204. Information Services Management. (2 cr; A-F only. Prereq–3202)
Information services as a function. Conceptual basis. Relationship of function, roles, and organizational
Structure, IS planning/business strategy, skill development, career pathing. Management of acquisition, subcontracting, outsourcing, operations, and user support.

**IDS 4421. Financial Information Systems and Technologies.** (2 cr; A-F only. Prereq–3001) IS in financial services, corporate financial operations, and investment management. Traditional vs. electronic financial markets, computerized trading, digital sources of financial data, electronic money, and decision technologies in financial services. Software development skills for personal investments.

**IDS 4431. Advanced Database Design.** (2 cr; A-F only. Prereq–3202) Comparative review of data modeling methodologies. Advanced constructs in database design. Modeling subtypes and supertypes, ternary and higher-order relationships, integrity constraints. CASE tools; representation of facts; verbalization of a data model for human understanding and validation.

**IDS 4432. Advanced Database Management and Administration.** (2 cr; A-F only, Prereq–4431 or 44431) Managing information resources. Data planning, global information architectures. Advanced data manipulation languages, comprehensive DBMS facilities, and O-O DBMS. Analysis and data mining tools. Deploying/managing databases in a distributed environment. Data integrity, security, and privacy.

**IDS 4441. Electronic Commerce.** (2 cr; A-F only. Prereq–3001, 30 cr) Service relationships as a conceptual basis. Evolutionary execution strategy based on application of business principles of key functions using proven product development practices. Measurement/evaluation principles/practice. Case studies from advertising, marketing, and fulfillment functions.


**IDS 4452. Data Communications and Networks.** (2 cr; A-F only. Prereq–44451) Structure of local and wide-area data communications networks. LAN architecture, protocols, and devices. WAN interconnections via frame relay and ATM. LAN operating systems structure and operations. The Internet and intranets. Network administration issues. EDI and electronic commerce and security.

**IDS 4490. Information Systems Special Topics.** (2 cr (max 10 cr); A-F only. Prereq–3202) Discussion and analysis of current topics and developments in information systems.

**IDS 4491. Independent Study in Information Systems.** (1-4 cr; A-F only. Prereq–3202) Learning by working in IS activities and receiving appropriate training from a sponsoring organization. Custom designed to meet pre-established learning objectives. “Work practice” plan required and must be approved by the organization and the director of IDS undergraduate studies.

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**Information Networking (INet)**

**College of Continuing Education**

**INet 4010. Network Administration.** (4 cr; A-F only. Prereq–CSci 5211 or E) Network architecture, switching, routing, algorithms, protocols, infrastructure hardware, cable plant, security, network management. Lecture, expert guest speakers, labs.

**INet 4011. Network Administration.** (4 cr; A-F only. Prereq–CSci 5211 or E) Network architecture, switching, routing, algorithms, protocols, infrastructure hardware, cable plant, security, network management. Lecture, expert guest speakers, labs.

**INet 4021. Network Programming.** (4 cr; A-F only) Network/distributed programming concepts. Design using C, Java, and/or higher level programming languages. Sockets, TCP/IP, RPC, streaming, CORBA, NET, SOAP. Labs use UNIX/Linux and MS Windows operating systems.

**INet 4031. System Administration.** (4 cr; A-F only) Server and data storage architecture, SCSD, Fibre Channel, RAID, striping. Configuring hardware/software for server and for data storage farms. Operational factors, including backup/recovery.


**INet 4051. I.T. Infrastructure Operations (Capstone).** (3 cr; A-F only. Prereq–CSci 5211 or one info networking course) Server, network, and database operations. Infrastructure architecture, organizational structure, security, metrics, vendor relations, outsourcing, capacity planning, strategic planning, budgeting. Online, case study.

**INet 4061. Introduction to Data Warehousing.** (3 cr; A-F only. Prereq–CSci 4707 or E) Data warehouse architecture. Star schema and dimensional modeling. Extract-Load-Transform processes. Query design. Administration/operation. Lecture, lab.

**INet 4193. Directed Study.** (1-4 cr [max 12 cr]) Topic arranged with IN/NA academic adviser.

**INet 4707. Practice of Database Systems.** (3 cr. Prereq–B.A.S. student in [INet or IN/NA or ITI]; A-F only) Concepts, data models. Case studies, data manipulation languages, logical data models, database design, facilities for database security/integrity, applications.

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**Insurance (Ins)**

**Industrial Relations Center**

**Curtis L. Carlson School of Management**


**INS 5100. Corporate Risk Management.** (2 cr) Theory applied to corporate risk management and insurance practices. Identification, measurement, and treatment of an organization’s financial risks integrated with its property, liability, workers compensation, and human resource risks. Selection and application of risk control and risk financing tools: risk retention, reduction and transfer, including insurance.

**INS 5101. Employee Benefits.** (2 cr. Prereq–5100 or HR 3021) or HRR 3021 or E) Design/administration of employee benefit plans and pension programs: health insurance, disability plans, salary reduction/deferred compensation programs—from social insurance to executive benefits. Multiple employer trusts. Alternative funding methods, including self-insurance. Ethical issues, legal liability, compliance with regulations.

**INS 5200. Insurance Theory and Practice.** (2 cr) Risk theory is applied to practices in health, liability, life, property, and workers compensation insurance. Insurance marketing, pricing, underwriting, and claims administration, with adverse selection and moral hazard effects. Policy issues of tort versus no-fault compensation systems. Self-insurance and integrated risk financing methods.


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**Inter-College Program (ICP)**

**College of Continuing Education**

**ICP 3075. Directed Study.** (1-15 cr) Independent, directed study.

**Interdepartmental Study (ID)**

**Career and Community Learning Center**

**College of Liberal Arts**

For definitions of course numbers, symbols, and abbreviations, see page 296.
ID 3421. Internship: Perspectives on Work. (4 cr. Prereq—Δ, internship through Career and Community Learning Center) Basic course in understanding work. Combines practical experience in an internship with reflection upon work in our society. Organizational structure, work as a cultural phenomenon, history of concepts of work, relationship of work to broader demands of citizenship.

ID 3301. Introduction to Marxism. (3 cr) Marxist philosophy as a worldview and methodology for study of processes in nature, society, and thought; linkage between technological development and evolution of class-divided societies; economic theory of capitalism and socialism; transition to socialism theory and practice; racism, sexism, homophobia, and national conflicts; aesthetics.

ID 3311. Museum Exhibits: From Initial Vision to Practical Implementation. (2 cr. Prereq—Δ) Introduces students to museum exhibit development culminating in the students designing a science exhibit. Study content research, educational strategies of informal science education, design, production stages, marketing, and evaluation. Multidisciplinary involving teachers in graphic art, biology, communication, marketing, science education, and others.

ID 3321. AIDS/HIV: Ethical Issues. (3 cr) Multidisciplinary examination of AIDS/HIV in cultural context. Ethical issues in educational, medical, and political responses to AIDS. Community resources available to people with HIV. Local debates about who gets what services. Required group service project in the community.

ID 3305. OMSSA: Pre-Law Program. (4 cr. Prereq—Δ) Non published course. OMSSA offers for selected students to participate in a summer exchange program with William Mitchell Law School.

ID 3501. Community, Service, and Self: Dynamics of Gender, Race, and Class. (2 cr. Prereq—Δ) First half of a year-long course designed to complement students’ volunteer experience in local communities. Examine community development and “community service” theory across cultures while applying them to direct service experience. Students volunteer 2-3 hours per week.

ID 3502. Community, Service, and Self: Dynamics of Gender, Race, and Class. (2 cr. Prereq—3205) Second half of a year-long course designed to complement students’ volunteer experience in local communities. Examine community development and “community service” theory across cultures while applying them to direct service experience. Students volunteer 2-3 hours per week.

ID 3551. Reading Italian in the Arts and Sciences. (1 cr) Designed to teach a basic reading knowledge of the Italian language; full time is devoted to intensive reading and translation of texts from a wide variety of disciplines and to the teaching of translation techniques.

ID 3501. The World in the City: Italy 1100-1660. (4 cr. Prereq—3015) Course examining social, economic, and political aspects of contemporary Italy. Taught in English.

ID 3503. Drama and Spectacle in Italy, 1200-1770. (4 cr. Prereq—3015) Italian drama, festival and spectacle from the medieval sacred plays to the reform of the theater by Goldoni.

ID 3507. Novelistica. (3 cr. Prereq—3201, or permission of DUS) Study of birth and development of the novel genre. Reading and discussion of stories form the Novellino, Boccaccio, Sacchetti, Biondo, Boccaccio, Basile, Verga, Deledda, Calvino, Introduction to formal study of novella structure.

ID 3497. Directed Readings. (1-4 cr. Prereq—Δ) Meets unique requirements decided on by faculty member and student. Individual contracts list contact hours, number of credits, written and other work required.

ID 3529. Trento Literature: Ruling the Canon. (4 cr. Prereq—3015, 3201 or #) Works of Boccaccio and Petrarch and their role in establishing the canon of Italian vernacular literature. Taught in English also as MeSt 5610.

ID 3528. The Narrow Door: Women Writers and Feminist Practices in Italian Literature and Culture. (4 cr. Prereq—3015) Focuses on issues of gender, sexual difference, equality, and emancipation raised by Italian women writers and thinkers from the 19th century to the present.

ID 3521. Italian Renaissance Epic. (4 cr. Prereq—3015, 3201 or #) Study of the narrative poems of Boiardo, Ariosto, and Tasso in the context of the fashioning of early modern Europe.
### Course Descriptions

#### Japanese (Jpn)

**Department of Asian Languages and Literatures College of Liberal Arts**

**Jpn 4062. Classical Japanese.** (4 cr. Prereq—4061 or #) Analysis of the structures and arguments of classical Japanese poetry, narrative, and drama.

**Jpn 5040. Readings in Japanese Text.** (2-4 cr [max 12 cr]; A-F only. Prereq—4041 or equiv or #) Students read authentic materials of various types to increase reading/speaking ability. Topics specified in Class Schedule.

**Jpn 5071. Communicative Competence for Japan-Oriented Careers.** (4 cr. Prereq—4041 or 4042 or #) Effective communication using spoken and written Japanese in contexts likely to be encountered by a career-oriented professional in Japan.

**Jpn 5072. Communicative Competence for Japan-Oriented Careers.** (4 cr. Prereq—5071 or #) Effective communication using spoken and written Japanese in contexts likely to be encountered by a career-oriented professional in Japan.

**Jpn 5160. Topics in Japanese Literature.** (4 cr [max 8 cr]) Literary, historical, or cultural study of selected Japanese literature.

**Jpn 5161. Women's Writing in Premodern Japan.** (4 cr; A-F only. Prereq—3162, 4061 or # when readings are in Japanese; 3162 or # when in translation) Works by women in premodern Japan including Genji monogatari, a lengthy narrative, Makura no soshi, a collection of vignettes, and poetry. Concerns include gendered writing system/authorship, narrative techniques, sexuality and the figure of the author, and strategies of fictionality.

**Jpn 5162. Tale Literature in Premodern Japan.** (4 cr; A-F only. Prereq—3162, course from classical Japanese language sequence or #) Tale literature, both Buddhist and secular, presents the world of the middle- to lower-class people. Rhetoric and religion, fiction and history, gender and sexuality, the role of the supernatural/fantastic, and re-tellings of earlier texts.

**Jpn 5163. Premodern Historical Narratives.** (4 cr; A-F only. Prereq—3162, course from classical Japanese language sequence or #) Narratives rooted in history. Issues include the problematization of reality, the formation of national identity, the idea of divine imperial power, oral storytelling and its relationship to written texts, and the popularization of historical writings.

**Jpn 5164. Readings in Early Modern Japanese Literature.** (4 cr; A-F only. Prereq—3032 when readings are in Japanese; A-F only. Prereq—3032 when readings are in Japanese) An examination of the stylistic and ideological aspects of the prose fiction, poetry, and non-fiction of the period 1683 to 1854. Offered in a rotating format alternating between readings in the original language and readings in English translation.

**Jpn 5165. Readings in Postwar and Contemporary Japanese Literature.** (4 cr; A-F only. Prereq—3032 when offered in Japanese) Literary and historical exploration of selected works published between 1945 and the present. Focus may be on a writer, a period, or a theme. Offered in a rotating format alternating between readings in the original language and readings in English translation.

**Jpn 5166. Literature by 20th-Century Japanese Women.** (4 cr. Prereq—3032 or #) Literary and historical exploration of selected works by Japanese women writers in a variety of genres. All literary texts read in Japanese; critical readings may be in English.


**Jpn 1012. Beginning Japanese.** (6 cr. Prereq—1011) Introduction to speaking, reading, and writing Japanese.

**Jpn 3001. Japanese Calligraphy and Appreciation I.** (2 cr. Prereq—1011) Basic tools (e.g., brush, sumi ink stick, rice paper). Practice in basic brush strokes. Different characters or hiragana in expressions that are appropriate for the season or that have cultural significance. Taught entirely in Japanese.

**Jpn 3002. Japanese Calligraphy and Appreciation II.** (2.5 cr. Prereq—3001 or #) Tools used in Japanese calligraphy (e.g., brush, sumi ink stick, rice paper). Basic brush strokes. Talk about/appreciation of calligraphy. Different characters or hiragana in expressions that are appropriate for the season or that have cultural significance. One-to-one feedback on practice calligraphy. Taught entirely in Japanese.

**Jpn 3021. Intermediate Japanese.** (5 cr. Prereq—1012 or #) Intermediate speaking, reading, and writing in Japanese.


**Jpn 3090H. Honors Course: Tutorial.** (1-4 cr)

**Jpn 3162. Traditional Japanese Literature in Translation.** (3 cr. Prereq—No knowledge of Japanese necessary) Survey of texts in different genres from the 8th to the early 19th centuries, with attention to issues such as “national” identity, gender and sexuality, authorship, and popular culture.

**Jpn 3163. Early Modern Japanese Literature in Translation.** (3 cr) Survey of the principal authors and genres of the period spanning Japan’s opening to the West (1860s) to World War II. Writers include Natsume Soseki, Shiga Naoya, Kawabata Yasunari, and Tanizaki Junichiro.

**Jpn 3164. Postwar Japanese Literature in Translation.** (3 cr. Prereq—Basic knowledge of modern Japanese history helpful; knowledge of Japanese language not required) Survey of the ideas and styles of recent Japanese literature. Writers include Dazai Osamu, Ibuse Masae, Oe Kenzaburo, Mishima Yukio, and Yoshimoto Banana. All readings in English translation.

**Jpn 3165. Japanese Performance Arts.** (3 cr) Japanese performance traditions with emphasis on Noh, Kabuki, and Bunraku in their literary and cultural contexts. The relationship between these traditions and the evolution of avant-garde performance practices.

**Jpn 3166. Japanese Film.** (3 cr) Themes, stylistics, and genres of Japanese cinema through the work of classic directors (Kurosawa, Mizoguchi, and Ozu) and more recent filmmakers (Iimori and Morita). Particular attention to representations of femininity and masculinity.


**Jpn 3451. Introduction to Japanese Linguistics.** (3 cr. Prereq—3022 or #) Analysis of structure and meaning of Japanese sentence patterns.

**Jpn 3900. Topics in Japanese Literature.** (1-4 cr [max 12 cr]) Topics specified in Class Schedule.

**Jpn 3920. Topics in Japanese Culture.** (1-4 cr [max 12 cr]) Topics specified in Class Schedule.

**Jpn 3993. Directed Studies.** (1-15 cr. Prereq—5 cr) Directed study in topics of Japanese literature or linguistics.

**Jpn 4041. Advanced Japanese Conversation and Composition.** (4 cr. Prereq—3032 or #) Practice in advanced spoken and written Japanese. Typical assignments include essays, summaries, and formal interviews in Japanese.

**Jpn 4042. Advanced Japanese Conversation and Composition.** (4 cr. Prereq—4041 or #) Practice in advanced spoken and written Japanese. Typical assignments include essays, summaries, and formal interviews in Japanese.


**Jpn 5171. Women's Writing in Premodern Japan in Translation.** (4 cr; A-F only. Prereq—3162 or #) Genji monogatari, a lengthy narrative, Makura no soshi, a collection of vignettes, and poetry. Gendered writing system/authorship, narrative techniques, sexuality and the figure of the author, and strategies of fictionality.

**Jpn 5176. Literature by 20th-Century Japanese Women in Translation.** (4 cr) Literary and historical exploration of selected works by Japanese women writers in a variety of genres. All literary texts read in English.

**Jpn 5251. History of the Japanese Language.** (4 cr. Prereq—3032, 5451 or #) Development of Japanese grammar from classical to the modern language.


**Jpn 5452. Structure of Japanese: Phonology/Morphology.** (4 cr. Prereq—3032, 3031 or #) Generative and nongenerative approaches to Japanese sound and word structure.

Jpn 5650. Proseminar: Japanese Linguistics. (4 cr. [max 12 cr] Prereq.–§RelA 3052 or 5452 or 5453 or #) Selected topics in Japanese linguistics and/or contrastive analysis of Japanese and English with attention to contributions from Eastern and Western linguistic traditions.


Jewish Studies (JwSt)
Department of Classical and Near Eastern Studies
College of Liberal Arts

JwSt 1034. Introduction to Judaism. (3 cr. §3034, §RelA 3034, §RelA 3034 Prereq.–No knowledge of Hebrew required) Survey of intellectual history, literature, beliefs, practices, values, laws, national, and cultural developments from the rabbinic period through today. Ancient and modern sources used to study Judaism. Combines Western critical methodologies with the Jewish traditions of learning.


JwSt 3034. Introduction to Judaism. (3 cr. §3034, §RelA 3034, §RelA 3034 Prereq.–No knowledge of Hebrew required) Survey of intellectual history, literature, beliefs, practices, values, laws, national, and cultural developments from the rabbinic period through today. Ancient and modern sources used to study Judaism. Combines Western critical methodologies with the Jewish traditions of learning.


JwSt 3112. Jewish Mysticism, Magic, and Kabbalah. (3 cr. Prereq.–#) Mystical traditions from early rabbinic traditions to Zohar (Book of Splendor) in 13th century. Literature of heavenly ascent (Hekhalot, Merkavah), Book of Creation (Sefer Yetzirah), precursors of Zohar—the Bahir. Schools of Provence, Gerona, and Zohar. Tension between legal/mystical aspects, magical heuristics, evolution of doctrine of Seferot, mystical interpretation of Scripture, erotic dimension.

JwSt 3113. African American and Jewish American Relations in the United States. (3 cr) Historical and scientific study of relations between African Americans and Jewish Americans in the U. S. during the 20th century. Includes immigration, work, cultures, gender, and alliance, and conflict.

JwSt 3115. Mishnah and Midrash in Translation. (3 cr §RelA 3115) Jewish law studied as a mirror of society and as a way to actualize its value. Consideration of original socioreligious contexts and current applications. Selections include biblical interpretations addressing moral, theological, legal, and literary problems.


JwSt 3401. The Art and Architecture of the Jewish People. (3 cr.) Jewish art and architecture from antiquity to 7th-century C.E. Issues include Jewish art and the Second Commandment, non-Jewish artistic traditions, the nature of Jewish art.


JwSt 3522. History of the Arab-Israeli Conflict. (3 cr.) The events leading to the re-establishment of the State of Israel in 1948 and subsequent conflicts and negotiations up to present. Zionism and Arab resistance, Great Powers’ involvement, War of Independence/First Palestine War, subsequent conflicts and their aftermath.

JwSt 3631. Jewish Writers and Rebels in German, Austrian, and American Culture. (3 cr) Investigates literary strategies of writing used by Jewish writers in Germany, Austria, and America to deal with problems of identity, anti-Semitism, and assimilation. Focus on 20th century. All readings (novels, poetry, stories) in English.

JwSt 3632W. Jewish Women in the United States. (3 cr) Analyze of the cultural, social, economic, and religious conditions of European Jewry and American society in the 19th- and 20th-centuries that structured the lives of American Jewish women.

JwSt 3900. Topics in Jewish Studies. (3 cr [max 12 cr]; A-F only) Historical, religious, sociological, anthropological, and humanistic study of Judaism and the Jewish people. Approach and method of study varies with topic.

JwSt 3951. Major Project. (4 cr. Prereq.–JwSt 2050, three 3000 JwSt courses or #) Research project using primary and secondary sources. Students select project in consultation with a faculty member who directs the research and writing.


JwSt 3955. Problems in Historiography and Representation of the Holocaust. (3 cr. Prereq.–JwSt 3521 or RelS 3521 or #) Focuses on issues connected with the Holocaust. Inclusiveness of other groups, Holocaust vs. “Shoah,” historiographical conflicts about perpetrators, an examination of the problems of representation in literature, problems of narrative theology after Auschwitz.

JwSt 5112. Jewish Mysticism, Magic and Kabbalah. (3 cr. A-F only) Mystical traditions from early rabbinic traditions to Zohar (Book of Splendor) in 13th century. Literature of heavenly ascent (Hekhalot, Merkavah), Book of Creation (Sefer Yetzirah), precursors of Zohar—the Bahir. Schools of Provence, Gerona, and Zohar. Tension between legal/mystical aspects, magical heuristics, evolution of doctrine of Seferot, mystical interpretation of Scripture, erotic dimension.

JwSt 5513. Scripture and Interpretation. (3 cr; A-F only, §RelA 5513) Idea of divine revelation, its impact upon religion/literature. How history of Bible’s creation, transmission, and interpretation help us think critically about role of idea of revelation in religious traditions. What is revelation? How does belief that a text is revealed affect the way it is read within the community for which it constitutes revelation?

JwSt 5900. Topics in Jewish Studies. (1-3 cr [max 6 cr]; A-F only) Topics specified in Class Schedule.

JwSt 5992. Directed Readings. (1-12 cr [max 12 cr], Prereq.–# Guided individual reading or study.

Journalism and Mass Communication (Jour)
School of Journalism and Mass Communication
College of Liberal Arts

Jour 1001. Introduction to Mass Communication. (3 cr; A-F only, Prereq.–Open to non-jour majors) Nature, functions, and responsibilities of communication media and agencies from professional point of view. News, opinion, entertainment, and persuasion functions, trends, communication tools, societal effects.

Jour 1905. Freshman Seminar. (3 cr; A-F only. Prereq.–Fr with no more than 24 cr) Topics specified in Class Schedule.

Jour 3004W. Information for Mass Communication. (3 cr; A-F only, Prereq.–Jour major or jour minor or approved IDM major or ICP major or BIS major) Information resources for professional/academic work in mass communication. Techniques for locating, retrieving, appraising, and verifying information acquired from public records, libraries, research institutions, databases, observation, and interviews.

Jour 3006. Visual Communication. (3 cr; A-F only. Prereq.–Jour major or jour minor or design comm major or design comm major or graphic design premajor or graphic design major or approved IDM major or ICP major or BIS major) Visual media, role of images in mass communication. Social, cultural, historical, psychological approaches to visual communication. Hands-on exercises for image making processes.

Jour 3007. The Media in American History and Law: Case Studies. (3 cr; A-F only. Prereq.–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Case-studies approach to focus on legal and ethical issues. Media in the socioeconomic-political-technological context of a specific historical period.
Course Descriptions

Jour 3008. Mass Communication Processes and Structure. (3 cr; A-F only. Prereq–Non-jour major or jour major with pre-jour or prog appr on prog plan or pre-jour with adviser approval)
Communication theories as they relate to mass communication processes; major structural aspects of mass communication systems as they affect mass communication processes.

Jour 3101. News Reporting and Writing. (3 cr; A-F only. Prereq–[jour major or jour minor or approved IDIM major or ICP major or BIS major], typing skill)
Fact gathering, journalistic writing. Problems in judgment/handling of news/news features.

Jour 3102. Visual Journalism. (3 cr; A-F only. Prereq–[jour major or approved IDIM major or ICP major or BIS major])
Introduction to nonfiction storytelling in multiple visual media. Fundamentals of photojournalism, news videography, and media graphics.

Jour 3201. Principles of Strategic Communication: Advertising. (3 cr; A-F only. Prereq–3004, 3159 or 3201 or 3202, [jour major or approved IDIM major or ICP major or BIS major])
Masmedia principles/history, production technology, typographic legibility research, analysis of printing, production costs.

Jour 3451. Broadcast News. (3 cr; A-F only. Prereq–3004W, 3101, 3102, [jour major or approved IDIM major or ICP major or BIS major])
News writing, reporting, videoography/editing, on-air delivery. Production of weekly University newscast for cable.

Jour 3511. Economics of New Media. (3 cr; A-F only. Prereq–3004W, 3101, 3102, [jour major or course appr on prog plan or pre-jour with adviser approval])
Traditional/new media companies. How to think about emerging communications technologies, especially those linked to Internet. Ways to think about “information” or “content” or “media” companies and what is written about them in popular press.

Jour 3522. Internet and Global Society. (3 cr; A-F only. Prereq–3004W, 3102, [jour major or approved IDIM major or ICP major or BIS major])
How people have used the tools of communication from earliest times to present. Impact of new technologies on society. Road to information superhighway.

Jour 3741. People of Color and the Mass Media. (3 cr; A-F only. Prereq–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval)
Past/present depictions of minority individuals/groups in movies, literature, radio/TV, etc, against anthropological, psychological, and sociological knowledge/experience. Emphasizes personal/political effects of media depictions.

Jour 3745. Mass Media and Popular Culture. (3 cr; A-F only. Prereq–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval)
Masmedia’s role in formation of popular culture and cultural discourse. Traditional debate over “mass communication,” masmedia representations, ethnicity, religion, social status, and gender. Prevaled media metaphors, caricatures, and stereotypes. Social/commercial pressures influencing media representation.

Jour 3771. Mass Media Ethics: Moral Reasoning and Case Studies. (3 cr; A-F only. Prereq–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval)
What it means to act “ethically.” Tools to identify/analyze ethical issues. Ethical norms of print/broadcast journalism, photojournalism, public relations, and advertising.

Jour 3776. Mass Communication Law. (3 cr; A-F only. Prereq–[jour major or jour minor or approved IDIM major or ICP major or BIS major])
Brief historical background, First Amendment rights, basic law of defamation, free press and fair trial, access to news, access to the press, privacy, contempt, obscenity, regulation of broadcasting/ advertising, antitrust controls, legal/ethical rules affecting journalistic practice.

Jour 3796. Media and Politics. (3 cr; A-F only. Prereq–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval)

Jour 3990. Special Topics in Mass Communication. (1-4 cr; A-F only. Prereq–[jour major or approved IDIM major or ICP major or BIS major])
Topics specified in Class Schedule.

Jour 3993. Directed Study. (1-3 cr; max 6 cr; A-F only. Prereq–3004W, [jour major or jour minor or approved IDIM major or ICP major or BIS major])
Directed study, projects.

Jour 3996. Directed Instruction. (1 cr; S-N only. Prereq–[jour major, #, Q])
One course for professional majors, one adviser-approved course for mass comm majors)
Internship supervised by communications organization at which student is working and by student’s academic sponsor.

Jour 4121. Capstone: In-Depth Reporting. (3 cr; A-F only. Prereq–3004W, 3101, 3102, [3121 or 3173W or 3451], [jour major or approved IDIM major or ICP major or BIS major])
Advanced problems in reporting about government, politics, social problems, and the arts.

Jour 4155. Capstone: Advanced Reporting Methods. (3 cr; A-F only. Prereq–3004W, 3101, 3102, [3121 or 3173W or 3451], [jour major or approved IDIM major or ICP major or BIS major])
Investigative techniques for mass media. Quantitative research methods, use of records/documents, analysis of statistics, advanced interviewing, methods for adverse conditions.

Jour 4171. Capstone: Arts Reviewing and Reporting. (3 cr; A-F only. Prereq–3004W, 3101, 3102, [3121 or 3173W or 3451, or #])
Covering the arts/entertainment beat/reviewer/reporter. Assignments follow flow of Twin Cities arts/entertainment season, including its controversies. Weekly writing assignments, readings, field trips, guest lectures from artists/art journalists.

Jour 4174. Capstone: Magazine Editing and Production. (4 cr; A-F only. Prereq–3004W, 3101, 3102, [3121 or 3173W or # or 3215] or 4259 or 4261, [jour major or approved IDIM major or ICP major or BIS major])
Writing, editing, illustration, design, layout, and photocomposition of multimedia. Emphasizes reporting and telling substantive stories that have implications for the public. Creating interactive experiences with audience. Developing editing skills. Students work in groups with varying specializations and create multimedia projects.

Jour 4259. Cases in Strategic Planning and Thinking. (3 cr; A-F only. 5141, 5143, 3004W, [3159 or 3201 or 3202], 3251, [jour major or approved IDIM major or ICP major or BIS major])
Public relations principles applied to problems in business, government, education, and community. Practical/ethical questions. Case studies.

Jour 4261. Advertising: Media Analysis. (3 cr; A-F only. Prereq–3004W, [3159 or 3201 or 3202], 3251, [jour major or approved IDIM major or ICP major or BIS major])
Print/electronic media and their role in advertising. Selection/scheduling, rate structures/policies, evaluation/use of media/market measurements/data.

Jour 4263. Strategic Communication Campaigns. (3 cr; A-F only. Prereq–3004W, 3251, Mktg 3001, [3179 or 3241 or 3279 or 4159 or 4359 or 4461], [jour major or approved IDIM major or ICP major or BIS major])
Developing campaign strategy/techniques. Emphasizes planning/decision-making skills.

Jour 4272. Interactive Advertising. (3 cr; A-F only. Prereq–Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval)
The Internet and other interactive forms of advertising. Defining interactivity. Interactive advertising models and how they differ from...
traditional ad models. Issues related to creating, measuring, pricing, and targeting interactive ads. Interactive ads in global, legal, and ethical contexts.

Jour 4274. Advertising in Society. (3 cr; A-F only. Prereq—Jour major or jour minor or approved IDM major or ICP major or BIS major) Economic, social, and cultural influences of advertising. Forms of regulation: self-regulation and government. Case study of advertising’s role in society. Exploration of current issues (e.g., stereotyping, political advertising, advertising to children). Ethics in advertising.

Jour 4302. Electronic Photojournalism. (3 cr; A-F only. Prereq—3004W, 3102, [jour major or approved IDM major or ICP major or BIS major]]) Practice of photojournalism in contemporary digital environment. Components of visual storytelling: conceptualizing/planning photo shoots, photo stories, essays; researching story ideas; gaining access to subjects; shooting strategies; structuring/presenting visual narratives in print, on Internet. Scanning techniques, digital darkroom processing with Photoshop. Optimizing images for print/Web outputs. Professional/ethical issues.

Jour 4321. Publication Graphics. (3 cr; A-F only. Prereq—3004, 3321, [jour major or IDM major or IDM major or ICP major or BIS major]]) Design process applied to production of magazines, brochures, newspapers, as tool to prepare electronic documents for printing.

Jour 4441. Capstone: Documentary Production. (3 cr; A-F only. Prereq—3004, 3101, 3102, [jour major or approved IDM major or ICP major or BIS major]], #) Types of “long form” news, reality-based production for cinema/TV. Preparing broadcast-quality documentary using non-linear editing techniques. Students work in teams. Lecture, lab.

Jour 4442. Capstone: Advanced Television News. (3 cr; A-F only. Prereq—3004W, 3101, 3102, 3451, [jour major or approved IDM major or ICP major or BIS major]]) Preparation/delivery of television newscasts. Industry problems, legal/ethical considerations, social impact of electronic journalism. Lecture, lab, news production.

Jour 4551. New Media Culture. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Impact of “new media” (all forms of internet communication, wireless media, and combinations of “old” and “new” media) on current/future cultures. How new media may change ways we communicate, distribute, and process information. Social impact.

Jour 4552. Law of Internet Communications. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Whether/how/which traditional media laws/ regulations apply to Internet. Developing law of communication on Internet, global/ethical issues.

Jour 4615. History of Visual Communication in Mass Media. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Social history of photography, film, video. Informational, documentary, propaganda, and entertainment functions of visual communication. Rise/influence of visual media industries and of public-image making.

Jour 4721. Mass Media and U.S. Society. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Economic, political, social, and cultural determinants of character/ content of mass communications in America. Effect, structure, meaning of mass media. Problems, prospects, criticism. Professionalism, technology, reform.

Jour 4731H. Honors: Communications Problems and Issues. (3 cr; A-F only. Prereq—Jour major or jour minor or approved IDM major or ICP major or BIS major]], honors) Individual project. Seminar.

Jour 4801. Global Communication. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Structures, processes, consequences of international mass communication. Problems in free flow of information. Roles of international organizations. Mass communication in social, political, economic development. Efficacy/inefficacy of propaganda. Legal/constitutional derivation of freedom of speech/press. Emphasizes case law, judicial theories, doctrines, tests, and values. Symbolic, commercial, compelled speech, speech plus, petition/assembly, leading press cases, legal research techniques.

Jour 5251. Psychology of Advertising. (3 cr; A-F only. Prereq—Jour major or jour minor or design comm premajor or design comm major or graphic design premajor or graphic design major or IDM major or ICP major or BIS major or BIS major) Psychological principles, research techniques, and applications in advertising/selling. Consumer attitudes/behavior. Psychological mechanisms upon which effectiveness of advertisements/commercials depends.

Jour 5316. Theories of Visual Communication. (3 cr; A-F only. Prereq—3306, [jour major or jour minor or IDM major or ICP major or BIS major]]) Perspectives on study/analysis of visual communication. Message structure, systems of production, use of visual media. Contributions from sociology, anthropology, psychology, and history.

Jour 5501. Communication and Public Opinion. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Theories of communication, persuasion, attitude change. Functions of interpersonal/mediated communication in diffusion of information and in opinion formation.

Jour 5541. Mass Communication and Public Health. (2 cr; A-F only. Prereq—Jour major or jour minor or grad major or IDM major or ICP major or BIS major) Role, function, effect of mass media on public health. Planned/unplanned effects. Review/analysis of literature on how theories, models, assumptions of mass communication research relate to public health.

Jour 5601H. History of Journalism. (3 cr; A-F only. Prereq—Jour major or jour minor or IDM major or ICP major or BIS major) Development of American newspapers/periodicals from beginnings in Europe to present day. Rise of radio/television. Relation of communications development to political, economic, social trends.

Jour 5606W. Literary Aspects of Journalism. (3 cr; A-F only. Prereq—Jour major or jour minor or IDM major or ICP major or BIS major) Literary aspects of journalism as exemplified in, and influenced by, works of English/American writers past/present. Lectures, discussions, weekly papers.

Jour 5725. Management of Media Organizations. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Introduction to concepts/principles of media management. Strategic planning, leadership, organizational strategies, ethical/legal issues. Working in teams. Balance sheets, income statements. Motivating/promoting people.

Jour 5771. Media Ethics: Principles and Practice. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) What it means to act “ethically.” Tools to identify/ analyze ethical issues. Ethical norms of print/broadcast journalism, photojournalism, public relations, and advertising.

Jour 5777. Contemporary Problems in Freedom of Speech and Press. (3 cr; A-F only. Prereq—Jour major or jour minor or IDM major or ICP major or BIS major) Legal/constitutional derivation of freedom of speech/press. Emphasizes case law, judicial theories, doctrines, tests, and values. Symbolic, commercial, compelled speech, speech plus, petition/assembly, leading press cases, legal research techniques.

Jour 5825. World Communication Systems. (3 cr; A-F only. Prereq—Non-jour major or jour major with course appr on prog plan or pre-jour with adviser approval) Mass media systems of the world, described/analyzed regionally/nationally. Historical roots. Social, economic, cultural context. Contemporary conditions/prospects. Relevance of journalism/mass communication to international affairs.

Jour 5990. Special Topics in Mass Communication. (1-4 cr; A-F only. Prereq—Jour major or approved IDM major or ICP major or BIS major) Topics specified in Class Schedule.

Jour 5993. Directed Study. (1-3 cr; A-F only. Prereq—3004, [jour major or jour minor or approved IDM major or ICP major or BIS major], GPA of at least 3.00,)) Directed study/projects.

Kinesiology (Kin)

School of Kinesiology

College of Education and Human Development

Kin 1050. Beginning Military Physical Fitness Training. (1 cr [max 4 cr]; A-F only) The Army’s model of physical fitness training is used to address five aspects of fitness in the context of running, weight training, strength exercise, circuit training, and team sport activities. Students are organized into groups of similar fitness levels.

Kin 1375. Play Behavior. (3 cr) Overview of play behavior across species, cultures, social settings. Relationship of play between physical/psychological development, role of sports/games in play, design of toys/playgrounds.

Kin 1871. Introduction to Kinesiology. (2 cr; A-F only) Examination of the professional and disciplinary dimensions of physical activity. Representative experiences include lecture, discussion, small group activities, and laboratory tours.

Kin 1989. Health and Society. (3 cr; A-F only §1999) Major factors influencing human health, including behavior, the physical and social environments, policy, and economics. Opportunities for citizen participation in addressing each factor are explored, focusing on health topics such as nutrition and violence.

Kin 1993. Directed Study in Kinesiology. (1-6 cr; A-F only) For lower division students planning to major in kinesiology or those who wish to study a topic or problem under tutorial guidance.

Kin 3001. Lifetime Fitness and Health. (3 cr; A-F only) Overview of fitness/health as function of disease risk, nutrition, stress management, weight control, exercise, illicit drugs, nutraceuticals, and well-being. Base of action/knowledge needed for surviving school, maximizing performance, and living a healthy life.

Kin 3027. Human Anatomy for Kinesiology Students. (3 cr; A-F only) Introduction to human anatomy. Emphasizes musculoskeletal anatomy germane to athletic training, biomechanics, exercise physiology, motor learning/development.
Course Descriptions

Kin 3050. Advanced Military Physical Fitness Training. (1 cr; max 4 cr; A-F only. Prereq—4 cr of 1050 or #) Students take on leadership roles in implementing Army’s model of physical fitness training. Model addresses five aspects of fitness in the context of running, weight training, strength exercise, circuit training, and sport/physical activity participation.

Kin 3111. Human Anatomy. (2 cr; A-F only §3110) Beginning anatomy course for nonkinesiology students pursuing coaching licensure or for nonprofessional students interested in an exercise science approach to anatomy. Focus on a regional approach to muscle, nerve, and circulatory anatomy of the limbs and trunk and a systematic anatomy approach for circulatory, respiratory, digestive, urinary, and nervous systems. Students are encouraged to voluntarily attend arranged demonstrations of human cadaver dissections.

Kin 3112. Introduction to Biomechanics. (3 cr; A-F only. Prereq—[3027 or 3111 or CBN 1027], Phys 1101W, CEHD student or #) Mechanical principles applied to human movement. Analytical methods of examining human motion. Quantitative/qualitative approaches.


Kin 3114. Prevention and Care of Athletic Injuries. (3 cr; A-F only. Prereq—[3027 or 3111 or CBN 1027], CEHD student or #) Principles in athletic training for prevention/care of injury. Taping/bracing techniques. Lab.

Kin 3126W. Psychology and Sociology of Sport. (3 cr; A-F only. Prereq—4 cr. CEHD student or #) Introduction to sport psychology and sport sociology. Topics include factors related to individual and institutional behavior in the following physical activity settings: competitive and recreational athletics, exercise, physical education, and rehabilitative.

Kin 3131W. History and Philosophy of Sport. (3 cr; A-F only. Prereq—Kin majors or #) Introductory description and interpretation of the historical and philosophical development of physical education and sport from primitive societies to 20th century civilization.

Kin 3133. Motor Control, Learning, and Development. (3 cr; A-F only §3132, §3135. Prereq—Kin major or #) Concepts and principles of the coordination and control of movement, the learning of movement skills, and the changes in movement performance and physical growth across the life span.

Kin 3143. Organization and Management of Sport. (3 cr; A-F only. Prereq—Kin major or #) Principles, policies, and procedures involved in the administration and management of sports programs at the interscholastic and intercollegiate levels.

Kin 3151. Measurement, Evaluation, and Research in Kinesiology. (3 cr; A-F only. §3150. Prereq—Kin major or #) Introduction to the philosophy of evaluation and measurement in physical education and exercise science. Test selection, construction, evaluation, and administration. Basic research methods, statistical analysis, and interpretation of test scores.

Kin 3168. Soccer Coaching. (1 cr §606 3371) Fundamental approaches used in the science of coaching soccer. Emphasis on teaching and coaching of technique, team organization and management, development of training schedules, and rules and strategies related to the design of test scores.

Kin 3169. Volleyball Coaching. (1 cr. Prereq—Good understanding of volleyball) Motivation, team building, communication, game strategies, philosophy. Lecture, discussion, practical application.

Kin 3171. Baseball Coaching. (1 cr) Safety, rules, team building, game strategies, and philosophy on understanding the sport before enrolling. Lecture, discussion, and practical application.

Kin 3172. Basketball Coaching. (1 cr) Teaching and coaching individual and team skills of the game; rules and strategies.

Kin 3173. Football Coaching. (1 cr) Responsibilities and philosophies of coaching, team management, skill development and analysis, rules, systems of play, psychology, and scouting.

Kin 3174. Golf Coaching. (1 cr) Safety, rules, etiquette, skill development and analysis, and philosophy. Students should have a good understanding of the sport before enrolling. Lecture, discussion, and practical application.

Kin 3175. Gymnastics Coaching. (1 cr) Coaching gymnastics for males and females. Skill progression, skill analysis and spotting, routine construction, safety, training for competition, scoring and rules, psychology, off-season conditioning, and responsibilities of the coach.

Kin 3176. Ice Hockey Coaching. (1 cr) Coaching hockey for males and females. Terminology, breakdowns, penalty killing, power-plays, neutral ice play, offensive forechecking, defensive strategies, comparisons of men’s and women’s techniques.

Kin 3177. Swimming and Diving Coaching. (1 cr) Coaching swimming for males and females. Stroke mechanics, starts and turns, safety, training for competition, psychology, off-season conditioning, roles and responsibilities of the coach.

Kin 3178. Tennis Coaching. (1 cr) Coaching strategies, safety and rules, training for competition, off-season training and conditioning, roles and responsibilities of the coach.

Kin 3179. Track and Field Coaching. (1 cr) Basic training and conditioning programs, event characteristics, coaching strategies, knowledge of track and field, meet administration.

Kin 3181. Wrestling Coaching. (1 cr) Teaching and coaching of technique, team organization and management, rules interpretation, and development of training schedules.

Kin 3327. Teaching Physical Education in the Elementary School. (2 cr; A-F only. Prereq—Elm ed major) Overview of the elementary physical education process with focus on a classroom teacher’s perspective and needs. Relevant experiences include participation, lecture, micro-teaching, final test.

Kin 3385. Human Physiology for Kinesiology Students. (3 cr; A-F only. Prereq—[3027 or CBN 1027 or equiv], Kin major or #) Tissue/organ function, cell structure, cellular enzymes, energy production, chemical composition of the body. Nervous, muscular, endocrine, circulatory, renal, respiratory, and gastrointestinal physiological concepts studied in detail. Clinical, exercise, sport, work examples.

Kin 3505. Introduction to Human-Centered Design. (3 cr; §5505) Application of design to meet human needs. Design of fabricated products, tools/machines, software/hardware interfaces, art/culture, living environments, and complex sociotechnical systems.

Kin 3696. Supervised Practical Experience. (1-10 cr [max 10 cr]; S-N only §3625. Prereq—Kin major or #) On-the-job supervised practical experience in the fields of sport and exercise under a specialist in a particular area of study or emphasis.

Kin 3993. Directed Study in Kinesiology. (1-10 cr; A-F only. Prereq—#) Student-selected clinical or research experience.

Kin 4385. Exercise Physiology. (4 cr; A-F only. Prereq—3385 or equiv, Kin major or #) Effects of exercise on physiological systems of the human body including energy and nutritional requirements of exercise, exercise prescription, and athletic conditioning, ergogenic aids, exercise in environmental extremes, and gender and heritability factors related to adaptation to exercise.

Kin 5001. Foundations of Human Factors/ Ergonomics. (3 cr; A-F only) Variability in human performance as influenced by interaction with designs of machines and computers, software and hardware, complex technological systems, jobs and working conditions, organizations, and sociotechnical institutions. Emphasizes conceptual, empirical, practical aspects of human factors/ergonomic science.

Kin 5103. Developmental/Adapted Physical Education. (3 cr; A-F only) Introduction to physical education for students with disabilities, emphasizing conceptual, organizational, and administrative issues. Topics include historical and legal foundations, service components, individualized education plans, professional roles, and assessment of movement skills.

Kin 5104. Physical Activities for Persons with Disabilities. (3 cr; A-F only) Different approaches to providing physical education service and related movement interventions for persons with disabilities. Topics: movement behavior foundations, movement skill progressions, unique considerations for specific impairments, and sport for persons with disabilities.

Kin 5106. Adapted Aquatics. (2 cr. Prereq—If certification as Adapted Aquatic Instructor desired, then current American Red Cross Water Safety Instructor or equivalent YMCA certification is required) Introduction to adapted aquatics for students in kinesiology and leisure studies, physical therapy, and those interested in working with people with disabilities. Topics: teaching approaches, programming, accommodations/adaptations, assessments, individualized plans. Activities: pool sessions with/without clients, groups, site observations.

Kin 5111. Sports Facilities. (3 cr; A-F only §Rec 5111. Prereq—Kin or rec grad student or MEd student) Steps in planning/building facilities for athletics, physical education, and sport for college, professional, and public use.

Kin 5115. Event Management in Sport. (3 cr; A-F only. Prereq—Grad student, #) Techniques/principles of planning, funding, and managing sport events. Collegiate championships, non-profit events, benefits, professional events.

Kin 5121. Application of Basic Sciences to Kinesiology. (3 cr; A-F only) Examination of how knowledge from the basics of science can lead to differing perspectives from which to approach questions directed to kinesiological inquiry.

Kin 5122. Applied Exercise Physiology. (3 cr; A-F only. Prereq—4385 or equiv or #) Mechanisms of cardiorespiratory and muscular responses to exercise, application of exercise physiology to assessment of work capacity, athletic conditioning, and requirements of human powered vehicles; low to moderate exercise as an intervention in lowering risk for common health problems.

Kin 5124. Human Factors Physiology. (3 cr; A-F only. Prereq—#) In-depth view of the concepts, problems, and issues associated with ergonomics applications to improving the design and operation of human work spaces.

Kin 5126. Sport Psychology. (3 cr; Prereq—3126 or equiv or #) Theory and research in sport psychology. Focus on the psychological study of human behavior in sport and physical activity settings.

Kin 5132. Motor Development. (3 cr; A-F only. Prereq—3133 or #) Developmental aspects of human movement behavior/learning. Life span change of motor skills.
Kin 5135. Motor Control and Learning. (3 cr; Prereq–3133 or #) Major research ideas/research that have advanced motor control/learning over last three decades.

Kin 5136. Psychology of Coaching. (3 cr) Psychological dimensions of coaching across age levels, including coaching philosophy, leadership, communication skills, motivation, and mental skills training for performance enhancement.


Kin 5171. Foundations of Kinesiology. (3 cr; A-F only. Prereq–Kin major or #) Introduction to the emerging field of kinesiology, broadly conceived as the study of human movement. Development and emergence of the term kinesiology and the scholarly, political, and educational ramifications of its development.

Kin 5196. Practicum: Developmental/Adapted Physical Education. (SF only. Max 4 cr) S-N only. Prereq–5103 or equiv or #) Observation of, participation in physical education instruction for students with disabilities. Current issues in developmental/adapted physical education. Exchange of ideas/problems.


Kin 5328. International and Comparative Sport and Physical Education: The Olympic Games. (3 cr; A-F only. Prereq–Grad or #) Explores the role the Olympic Games has played and continues to play in the global village. Advanced insight into the substance, nature, and significance of sport to nation building and the international and comparative sociocultural process.

Kin 5365. Health Promotion Program Design and Implementation. (3 cr; A-F only. Prereq–3001) Study of behavioral change methodology and theory related to nutrition, weight control, exercise, stress management, healthy lifestyles, and lifetime health. Application of these concepts in health promotion settings including work sites, managed care organizations, clinics, fitness centers, and educational institutes.

Kin 5371. Sociology of Sport. (3 cr; A-F only. Prereq–3126, grad or #) A study of sport, sporting processes, social influences, systems, and structures that have effected and exist within, and among societies, nations, and cultures. Exploration of contemporary issues concerning social differentiation and social concerns such as violence and honesty.

Kin 5375. Competitive Sport for Children and Youth. (3 cr) Cognitive, behavioral, and biological factors having important implications for competitive sport participants from early childhood through high school age. Emphasis on translating sport science research into practical implications for youth sport coaches, teachers, and administrators.

Kin 5385. Exercise for Special Populations. (2 cr; A-F only. Prereq–undergraduate physiology or biology) Exercise testing and prescription with modifications required because of special considerations associated with aging, gender differences, environmental conditions, and the presence of medical conditions.

Kin 5421. Sport Finance. (3 cr; A-F only. Prereq–Grad student, #) Introduction to financial analysis in sport. Cash flow statements, budgeting issues, traditional/innovative revenue producing strategies available to sport organizations. Discussion, practical analysis of current market.

Kin 5435. Advanced Theory and Techniques of Exercise Science. (3 cr; A-F only. Prereq–[3385, 4385, kin major or #) Theoretical constructs, in-depth description of procedures used in exercise science research and clinical settings. Laboratory exercises, lectures.

Kin 5461. Foundations of Sport Management. (3 cr; A-F only. Prereq–Kin or rec student or #) Theories/techniques in administration/management of sport enterprises. Organizational theory/policy, practical examples of sport management skills' strategies.


Kin 5505. Human-Centered Design: Principles and Applications. (3 cr. §3505) Application of design to meet human needs. Design of fabricated products, tools/machines, software/hardware interfaces, art/culture, living environments, and complex sociotechnical systems.

Kin 5511. Women in Sport and Leisure. (3 cr; A-F only. SRec 5511) Critically examines women’s involvement in/ contributions to sport, physical activity, and leisure.


Kin 5621. Advanced Athletic Training: Evaluation of Athletic Injury. (3 cr; A-F only. Prereq–3114, [3027 or CBN 1027]) Theory, principles, techniques to recognize/evaluate athletic injury to all major body parts.

Kin 5622. Therapeutic Modalities in Athletic Training. (3 cr; A-F only. Prereq–3114) Theoretically based guide for the use of therapeutic modalities for the management of athletic injuries in a practical setting.

Kin 5631. Programming and Promotion in Sport. (3 cr; A-F only. Prereq–Grad student, #) Introduction to marketing concepts as they apply to sport industry. Consumer behavior, market research, marketing mix, corporate sponsorship, licensing. Discussion, practical application.

Kin 5696. Practicum in Kinesiology. (1-6 cr [max 6 cr]; S-N only. Prereq–Grad student in kin, #) Practical experience in kinesiology under supervision of a University adviser and an agency supervisor.

Kin 5697. Student Teaching: Coaching. (1-10 cr [max 10 cr]; S-N only. Prereq–Admitted to coaching program, #) Student coaching experience under supervision of a mentor coach.

Kin 5720. Special Topics in Kinesiology. (1-8 cr [max 9 cr]. Prereq–Upper div undergrad or grad student in kin or #) Current issues in the broad field and subfields in kinesiology, related coursework in areas not normally available through regular offerings.

Kin 5722. Human Factors Psychology. (3 cr; A-F only. Prereq–Grad student or #) Psychological principles that underlie human interactions with technological systems. Techniques/methodologies to assess faulty/incorrect system design. Emphasizes human-centered approaches. Rigorous evaluation of human-machine interaction.


Kin 5725. Organization and Management of Physical Education and Sport. (3 cr; A-F only. Prereq–Grad/init lic or #) Comprehensive analysis of organization and management of physical education and sport in educational settings. Focus on management and planning processes, management skills, functions, roles, decision making, leadership, shared systems, and organizational motivation. For physical education teachers, coaches, community sport administrators.

Kin 5726. Physical Education—Teaching and Trekking. (2 cr; A-F only. Prereq–Kin major, MEd student, or #) Development of cooperative and team-building activities, group planning, and leadership skills in preparation for a two-day trip in a state park using practiced outdoor skills of camping, canoeing, and backpacking. Must be comfortable in water.

Kin 5727. Physical Education—An Adventure Experience. (1 cr; A-F only. Prereq–Kin major, MEd student, or #) Group and individual initiatives in an experientially based program emphasizing participation in leadership, group cooperation, problem solving, low ropes, climbing walls, sensible risk taking, and trust-oriented activities.

Kin 5740. Topics: Coaching of Individual, Dual, or Team Sports. (1-9 cr [max 9 cr]; A-F only. Prereq–PEL) Instruction at the advanced level, including analyses of skills, game strategies, specific techniques of coaching, and methods of training and conditioning.

Kin 5801. Legal Aspects of Sport and Recreation. (4 cr; A-F only. SRec 5801) Kin or rec major) Legal issues related to recreation, park, and sport programs/facilities in public/private sectors.

Kin 5914. National Basis of Movement. (3 cr; A-F only. Prereq–[3111, CBN 1027] or equiv), [Phsl 3051 or equiv]) Overview of various national subsystems involved in controlling human/primate sensorimotor behavior. Effects of brain lesions on overt behavior, possibilities for rehabilitation. Seminars/lectures plus field trip. Lectures, seminars, class presentations.

Kin 5981. Research Methodology in Kinesiology and Leisure Studies. (3 cr; A-F only. SRec 5981) Prereq–3115 or equiv) Defines/reviews various types of research in exercise/sport science, physical education, and recreation studies. Qualitative research, field studies, and methods of introduction as alternative research strategies to traditional scientific paradigm.

Kin 5992. Readings in Kinesiology. (1-9 cr [max 9 cr]; A-F only. Prereq–CJED student, grad, #) Independent study under tutorial guidance.

Kin 5995. Research Problems in Kinesiology or Physical Education. (1-6 cr [max 6 cr]; A-F only. Prereq–Grad student or MEd student in kin or #) Focus on selected topics in physical activity/human performance.

Korean (Kor)
Department of Asian Languages and Literatures
College of Liberal Arts
Kor 1011. Beginning Korean. (5 cr) Basic grammatical structure, vocabulary, and expressions of modern colloquial Korean. Introduces Korean writing system.

Kor 1012. Beginning Korean. (5 cr. Prereq–1011) Basic grammatical structure, vocabulary, and expressions of modern colloquial Korean.
Kor 3021. Intermediate Korean. (5 cr. Prereq—1012) Speaking, reading, and writing at intermediate level in modern colloquial Korean. Simple narration/ written reports. Some basic Chinese characters may be introduced.


Kor 3650. 20th Century Korean Literature in Translation. (3 cr) Various works of Korean literature from colonial age through 1990s. Literary responses to historical changes. Relationship of literary works with historical issues such as colonial experience, Korean civil war and its results, and modern industrial society.

Kor 3900. Topics in Korean Literature. (1-4 cr [max 12 cr]) Topics specified in Class Schedule.

Kor 3920. Topics in Korean Culture. (1-4 cr [max 12 cr]) Topics specified in Class Schedule.

Laboratory Medicine and Pathology (LaMP)

Department of Laboratory Medicine and Pathology

Medical School

LaMP 4172. Pathology for Allied Health Students. (3 cr. Prereq—Regis allied health program, anatomy course, physiology course or #) General and organ system pathology.

LaMP 4177. Pathology for Allied Health Students. (3 cr. Prereq—Regis allied health program, anatomy course, physiology course or #) General and organ system pathology.

LaMP 5125. Chronobiology. (2-6 cr; A-F only) How to interpret biologic time series and how to use them in practice as well as in designing chronobiology experiments. Chronobiologic procedures of data collection and analysis, interpretation of the output in clinical practice. Anatomic pathology experience.

Landscape Architecture (LA)

Department of Landscape Architecture

College of Architecture and Landscape Architecture

LA 1101W. Introduction to Design Thinking. (4 cr; A-F only) Introduction to theories and processes that underpin design thinking. Survey of the design professions; the power of design; and interactions between humans and their natural, social, and designed environments.

LA 1201. Learning from the Landscape. (3 cr; A-F only) Physical elements shaping the world. Shapes, forms, and order of towns, cities, and countryside. How design, planning, and natural systems, taken together, shape physical surroundings. Lectures, discussions, field trips.

LA 1301. Introduction to Drawing in Architecture and Landscape Architecture. (3 cr; A-F only) Development of basic skills involved in perceiving and representing the material environment. Study of sketching and drawing conventions of visual phenomena and forms.

LA 1401. The Designed Environment. (3 cr; A-F only) Examination of relationships between place and space, and realms of the ideal and real, public and private. Survey of how the fields of architecture, landscape architecture, and urban design have explored these issues.

LA 3001. Introduction to Landscape Architectural Design. (3 cr; A-F only. Prereq—LA major or LA grad or #) Introduction to spatial design issues at all scales.

LA 3204. Landscape Ecology. (3 cr; A-F only) Relationships among spatial patterns, temporal patterns, and ecological processes in landscape.

LA 3413. Introduction to Landscape Architectural History. (3 cr; max 3 cr) A-F only. Prereq—One course in history at 1xxx or higher) Study of landscape architecture’s roots by examining the creation of landscapes over time. Areas of emphasis include ecological and environmental issues; and the political, economic, and social contexts of landscape architectural works.

LA 3501. Environmental Design and Its Biological and Physical Context. (3 cr; A-F only) Consideration of dynamic relationships between environmentally designed places and their biological and physical contexts. Case studies of successfully integrating created place and biological and physical contexts.

LA 3571. Landscape Construction: Site Systems and Engineering. (3 cr; A-F only. Prereq—B.E.D. major or B.E.D. minor or #) Theory applications of landform systems for design. Landform typography, representation methods, manipulation techniques, use of land survey data, earthwork construction issues. Spatial accommodation of vehicles in landscape architecture, including road design.

LA 5201. Making Landscape Spaces and Types. (6 cr; A-F only. Prereq—B.E.D. accelerated status or LA grad or #) Design exploration using 3-D models and historical precedent studies to create outdoor spaces for human habitation and use. Application of the basic landscape palette of landform, plants, and structures to give physical, emotional, cognitive, and social definition to created places.

LA 5202. Landscape Analysis Workshop. (1 cr; S-N only) Introduction to field techniques for site analysis, including vegetation, soil, and landform description. One-week session, before fall term, at lake Itasca Forestry and Biological Station.

LA 5203. Ecological Dimensions of Space Making. (6 cr; A-F only. Prereq—LA grad student, accelerated B.E.D. student) Design studio experience drawing on ecological, cultural, aesthetic influences to explore development of design ideas responsive to ecological issues and human experience.


Course Descriptions

LA 5351. AutoCAD I. (3 cr. A-F only. Prereq—B.E.D. major or LA grad or #; may not be taken for graduate credit) Basic concepts, tools, and techniques of computer-aided drawing. Introduction to current AutoCAD Release software. Strategies and techniques for producing dimensioned and annotated drawings. Introduction to 3-D drawing capabilities. Use of dimension variables, attributes, blocks, symbols, and creation of customized menus.

LA 5352. AutoCAD II. (3 cr. A-F only. Prereq—Arch 5351 or LA 5351. B.E.D. major or LA grad or #; may not be taken for graduate credit) Intermediate concepts, tools, and techniques of computer-aided drawing with current AutoCAD Release software. Strategies and techniques for producing dimensioned and annotated drawing. Use of dimension variables, attributes, blocks, symbols, and creation of customized menus.

LA 5371. Computer Methods I. (1 cr. Prereq—B.E.D. accelerated status or LA grad or #) Introduction to current techniques, programs, and new editions of computer programs, and their application to landscape architecture computing.

LA 5372. Computer Methods II. (1 cr. Prereq—Arch/5371. LA 5371. or LA grad or #) Current techniques and computer programs, and their application to landscape architecture computing.

LA 5373. Computer Methods III. (3 cr. Prereq—Arch/5372. LA 5372. or LA grad or #) Advanced techniques and computer programs, and their application to landscape architecture computing in design, theory, and technology.

LA 5400. Topics in Landscape Architecture. (1-3 cr [max 12 cr]; A-F only. Prereq—B.E.D. accelerated status or LA grad or #) Current topics in landscape architecture. Taught by regular or visiting faculty in their areas of specialization.

LA 5401. Directed Studies in Emerging Areas of Landscape Architecture. (1-6 cr [max 12 cr]. Prereq—B.E.D. accelerated status or LA grad or #) Independent studies under the direction of landscape architecture faculty.

LA 5402. Directed Studies in Landscape Architecture. (1-6 cr [max 12 cr]. A-F only) Prereq—B.E.D. accelerated status or LA grad or #) Independent studies under the direction of landscape architecture faculty.

LA 5403. Directed Studies in Landscape Architecture Technology. (1-6 cr [max 12 cr]. A-F only. Prereq—B.E.D. accelerated status or LA grad or #) Independent studies under the direction of landscape architecture faculty.

LA 5404. Directed Studies in Landscape Architecture. (1-6 cr [max 12 cr]. A-F only. Prereq—B.E.D. accelerated status or LA grad or #) Independent studies under the direction of landscape architecture faculty.

LA 5405. Interdisciplinary Studies in Landscape Architecture. (1-6 cr [max 12 cr]. A-F only) Prereq—B.E.D. accelerated status or LA grad or #) Research, planning, and/or design projects. Topics vary.

LA 5413. Introduction to Landscape Architectural History. (3 cr [max 3 cr]; A-F only. Prereq—One course in history at 1xxx or higher) Introductory course examines the multiple roots of landscape architecture by examining the making of types of landscapes over time. Emphasis on ecological and environmental issues, and issues related to political, economic, and social contexts of landscape architectural works.

LA 5431. History of Landscape Architecture: Individual Influences. (3 cr; A-F only) Assessment of influences of individuals on formation of the profession of landscape architecture from 1800 to present. Lectures, presentations, field trips, readings, papers, projects.

For definitions of course numbers, symbols, and abbreviations, see page 296.
LA 5571. Landscape Construction: Landform Systems and Spatial Performance. (3 cr; A-F only.) Prereq–Accredited B.S.Ed student or LA grad student) Theory and professional applications of landform systems for design. Landform typology, representation methods, manipulation techniques, use of land survey data, earthwork construction issues. Spatial accommodation of vehicles in landscape architecture, including road design.

LA 5572. Plants in Design. (3 cr; A-F only.) Prereq–[5201, 5203, plant identification course or #) Design principles for using plants in landscape. Cultural/ecological principles in design projects of various scales. Lectures, presentations, field trips, readings, projects.

LA 5573. Landscape Technology: Introduction to Geographic Information Systems. (3 cr; A-F only.) Prereq–Jr or Sr B.E.D. major or LA grad or #) GIS as an analytical tool to solve geographical problems of regional landscape design and resource management. Topics include application techniques, analytical procedures, data characteristics, data sources, input/output methods, and implementation.

LA 5574. Identification of Minnesota Flora. (3 cr; A-F only.) Prereq–BED accelerated status or LA grad student or #) Introduction to identification of approximately 500 plants commonly used by landscape architects and environmental designers in Minnesota. Students develop a working knowledge of over 250 plants. Focuses on plant selection techniques, plant landscape associations, and issues of plants for use in standard landscape architectural settings. Regular field sessions.

Language, Teaching, and Technology (LgTT)
Institute of Linguistics, ESL, and Slavic Languages and Literatures
College of Liberal Arts

LgTT 5101. Applications of Technology in Language Teaching. (3 cr) Explore uses of technology in language teaching: theoretical background, demonstrations, and applications.

LgTT 5110. Technology in the Second Language Classroom. (2 cr; 55611) Examine, evaluate, and use technology in language teaching. Theoretical background, demonstration, hands-on exploration.

LgTT 5611. Technology in Second Language Instruction. (3 cr, Prereq–SCL postbac or #) Using audio, video, and computer technology in second language teaching/learning in classroom, independent study, and distance education environments.

LgTT 5710. Special Topics in Language Teaching and Technology. (1-3 cr; max 12 cr) Examines, evaluates, apply specific area of technology to K-12 education, second/foreign language teaching/learning in classroom, independent study, distance education environments.

Latin (Lat)
Department of Classical and Near Eastern Studies
College of Liberal Arts

Lat 1001. Beginning Latin I. (5 cr) Gradual mastery of Latin structure in order to attain reading knowledge; practice in oral reading and composition.

Lat 1002. Beginning Latin II. (5 cr, Prereq–1001 or equiv) Continuing work on Latin grammar and syntax; graduated readings from Roman authors including Cicero, Catullus, and Roman comedy.

Lat 1111H. Honors Course: Beginning Latin. (3 cr, Prereq–1111H or honors program or high ability as indicated by high school transcript) Intensive Latin course covering material usually taught over two semesters. Students must also register for 1112 when taking this class.

Lat 1112H. Honors Course: Beginning Latin, Recitation. (3 cr, Prereq–1111H, regis in honors program or high ability as indicated by high school transcript) Drills and composition exercises. Students must also register for 1111 when taking this class.

Lat 3100. Reading Latin Prose. (3 cr, Prereq–1002 or 1111 or 1112 or 3111 or 3112 or #) Introduction to reading Latin prose. Selections from Roman authors. Review of grammar/syntax. Follow-up course to intensive Latin or review for students returning to reading Latin after time lapse.

Lat 3111. Intensive Latin. (3 cr, §1001, §1002, §1111. Prereq–§1111; previous exper in another foreign language desirable.) Intensive Latin course covering material usually taught over two semesters. Undergraduates must also register for 3112 when taking this class.

Lat 3112. Intensive Latin, Recitation. (3 cr, §1001-1002, §1112. Prereq–§3111; previous exper in another foreign language desirable.) Drills and composition exercises. Students must also register for 3111 when taking this course.

Lat 3113. Republican Latin Authors. (4 cr, Prereq–1002 or 1111 or 3 yrs high school Latin or #) Intermediate Latin reading featuring selections from Caesar, Cicero and Catullus. Grammar review, introduction to Latin metrics; history and culture of the late republic.

Lat 3114. Augustan Latin Authors. (4 cr, Prereq–3113 or #) Students progress from intermediate to advanced Latin reading while surveying the world of Augustus. Romans include Livy, Virgil, and Ovid.

Lat 3310. Advanced Undergraduate Latin: History. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) Roman history as the Romans wrote it; selections from Livy, Sallust, Tacitus, or Ammianus.

Lat 3320. Advanced Undergraduate Latin: Belles-Lettres. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) Selections from expository Latin literature (essays, epistles, monographs).

Lat 3330. Advanced Undergraduate Latin: Oratory. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) One or more appropriate authors studied each semester.

Lat 3340. Advanced Undergraduate Latin: Epic/Pastoral. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) One or more appropriate authors studied each semester.

Lat 3350. Advanced Undergraduate Latin: Lyric/Elegiac. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) One or more appropriate authors studied each semester.

Lat 3360. Advanced Undergraduate Latin: Drama. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) One or more appropriate authors studied each semester.

Lat 3370. Advanced Undergraduate Latin: Satire. (3 cr, max 12 cr.) Prereq–3114 or equiv or #) One or more appropriate authors studied each semester.

Lat 3440. Advanced Undergraduate Latin: Later Latin. (3 cr, max 12 cr.) Prereq–3114 or A) Reading course covering authors of Late Antiquity, the Middle Ages and the Renaissance. Topics specified in Class Schedule.

Lat 3450. Advanced Undergraduate Latin: Classical Authors. (3 cr max 12 cr.) Prereq–3114 or A) Readings from various classical Latin authors. Topics specified in Class Schedule.

Lat 3951. Major Project. (4 cr. Prereq–Greek-Latin or Latin major; three 300 Latin courses or #) Research project using documents and other sources from the ancient world. Students select project in consultation with a faculty member who directs the research and writing.

Lat 3960H. Honors Course: Advanced Undergraduate Latin Reading. (3 cr max 12 cr.) Prereq–Regis in honors program or high ability as indicated by transcript) Student attends Latin 33xx, 3440, and 3450 and does additional work for honors credit.

Lat 3993. Directed Studies. (1-4 cr max 12 cr.) Prereq–# and A) Directed individual reading or study.

Lat 5012. Latin Prose Composition. (3 cr. Prereq–3114 or A) Advanced understanding of Latin grammar, syntax, diction, and prose style through graduated exercises in prose composition.


Lat 5310. Latin Literature: History. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5320. Latin Literature: Epistles and Essays. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5330. Latin Literature: Oratory. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5340. Latin Literature: Epic and Pastoral. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5350. Latin Literature: Lyric and Elegiac Poetry. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5360. Latin Literature: Latin Dramatists. (3 cr max 12 cr) One or more appropriate authors studied each semester. Authors vary.

Lat 5370. Latin Literature: Satire. (3 cr max 12 cr) Prereq–Grad student or #) One or more authors.

Lat 5380. Latin Literature: Legal Texts. (3 cr max 12 cr) One or more appropriate authors studied each semester.

Lat 5390. Latin Literature: Religious Texts. (3 cr max 12 cr, Prereq–3114) Reading and discussion of religious texts from Latin antiquity, such as Varro’s Antiquitates Divinae, Cicero’s De natura deorum, Apuleius’s Metamorphoses, or Christian writers (Tertullian, Cyprian, Lactantius, Jerome, Augustine).

Lat 5410. Latin of Late Antiquity. (3 cr max 12 cr.) Prereq–34xx or equiv or #) Readings in Latin literature selected from the 3rd to 6th centuries A.D. Topics specified in Class Schedule.

Lat 5420. Medieval Latin. (3 cr max 12 cr) Prereq–34xx or equiv or #) Readings from 6th to 15th centuries. Authors and genres vary; topics specified in Class Schedule.

Lat 5621. Latin Paleography. (3 cr Prereq–Three 3xxx-5xxx Latin cr or #) Analysis of various hands used in manuscripts of Latin authors with attention to date and provenance; transmission of ancient Latin literature.
Lat 5715. Introduction to the Historical-Comparative Grammar of Greek and Latin. (3 cr. Prereq—# or 2 yrs college Greek) Historical and comparative grammar of Greek and Latin from their Proto-Indo-European origins to the classical norms.

Lat 5717. History of Latin. (3 cr) Reading and analysis of documents illustrating the stylistic registers and evolution of the Latin language from its earliest attestations through the Middle Ages.

Lat 5993. Directed Studies. (1-4 cr [max 18 cr]. Prereq—#, A) Guided individual reading or study.

Lat 5994. Directed Research. (-12 cr [max 20 cr]. Prereq—#) Guided research on original topic chosen by student.

Lat 5996. Directed Instruction. (-12 cr [max 20 cr], Prereq—#, A) Supervised teaching internship.

Learning and Academic Skills (LASk)

Department of Educational Psychology College of Education and Human Development

LASk 1001. Mastering Skills for College Success. (2 cr) 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.

LASk 1101. Academic Success. (1 cr; A-F only. §FR 3251) Educational goals, life management skills, plan to promote academic success. Learning-style, performance, selecting strategies, and establishing a motivation, life skills, and their relation to successful learning/academic performance skills. Improve

Las 3017. Peoples and Cultures of Middle America. (3 cr §Anth 3017) Surveys the Indian and Mestizo (Hispanic) cultures of Mexico and Guatemala and parts of Belize, Honduras, and Nicaragua. Describes both pre-Hispanic and Hispanic influences, with attention to area-wide patterns and local traditions.

Las 3019. Hispanic Cultures of Latin America. (3 cr §Anth 3019, Prereq—# or #) An overview of Hispanic cultures from Mexico to South America; includes topics such as economy, underdevelopment, the family and ritual kinship, gender, religion, values, ideology, and change. Several concepts are introduced to explore continuity and change.

Las 3114. International Perspectives—U.S.—Mexico Border Cultures. (3 cr §Chic 3114) Examines the relations of Mexico and the United States from an international perspective, with an central focus on the cultural interchange in the border lands between the United States and Mexico, using both literary and historical materials.

Las 3251. Role of Renewable Natural Resources in Developing Countries. (1 cr; A-F only, §FR 3251) International perspectives on important resource issues including integration of natural resource, social, and economic considerations. Overviews of issues and case studies.

Las 3401W. Early Latin America to 1825. (4 cr §Hist 3401) Native American and colonial periods to 1825, with emphasis on social, cultural, and economic aspects.

Las 3402W. Modern Latin America: 1825 to Present. (4 cr §Hist 3402) National and contemporary period 1825 to present, with emphasis on social, cultural, political, and economic change.

Las 3405. Latin American Women’s Lives. (3 cr §WSt 3405) Prereq—WSt 1001; WSt 1002 or WSt 1003 or #) An interdisciplinary approach to understanding women’s lives in Latin America. Use of ethnography, history, poetry, fiction, and “testimonio” to understand the conditions of women’s lives in Latin America.

Las 3427. History of Cuba and Puerto Rico. (3 cr §Chic 3427, §Hist 3427) Historical development of Cuba and Puerto Rico from pre-Columbian times through Spanish conquest to the present. Conquest and colonization, slavery, Hispanic Caribbean society and culture, Operation Bootstrap, Cuban Revolution.

Las 3428. History of Relations Between U.S. and Mexico: 1821 to Present. (3 cr §Chic 3428, §Hist 3428) U.S.-Mexico relations in the 19th and 20th centuries. Examines histories as they intersect in the late 1820s through the loss of Texas, the Mexican-American War, and economic relations between the two countries including NAFTA and the Chiquita rebellion of 1994.

Las 3441. Chicana/o History to 1900. (3 cr §Chic 3441, §Hist 3441) The history of the Mexican people from the 16th through 19th centuries. Historical theories of colonialism, expansion, economy, assimilation, migration and settlement; race, class and gender, political, social and cultural interaction, and conflict.

Las 3442. Chicano History to Present. (3 cr §Chic 3442, §Hist 3442) The 20th-century Chicana/o experience: migration, repatriation, the Bracero program, politics, the Chicana/o movement, work, society, and culture.

Las 3502W. Foundations of Brazillian Culture. (3 cr §Port 3502, Prereq—Port 3003 or equiv) Emphasis on Brazilian modern society. History, culture (music, art, cinema, literature, intellectual thought, popular culture, media), and social problems (ethnicity, tropical deforestation). Discussions and readings are in Portuguese.

Las 4121W. Geography of Latin America. (3 cr §Geog 4121) Interplay of natural environment and history in shaping contemporary Latin America. Political ecology of natural resources, food supply and distribution, urbanization and the informal economy, migration, ethnicity, and the role of the state and international agencies in domestic economies.

Las 4465. Housing in World Perspective. (3 cr A-F only, SDHA 4465, Prereq—DHA 2401, DHA 2463 or #) Evaluation of theories and concepts that allow an understanding of housing polices and housing choices of individuals, families, and households in developed and developing countries.

Las 4479. Latin American Government and Politics. (3-4 cr §Pol 4479, Prereq—Pol 1054 or Pol 3051 or non-pol sci grad or #) An overview of Latin American politics and political economy focused on authoritarianism, human rights, and redemocratization; development and economic policy; social movements; ethnicity and race; religion; revolution; U.S.—Latin American relations.

Learning and Academic Skills (LASk)
Ling 5005. Applications of Linguistics. (3 cr. Prereq–3001 or 3011 or 5001 or #) Relationships between linguistics and neighboring disciplines. Applications to practical fields such as lexicography, orthography, translation/interpreting, language planning, reading, language teaching, bilingual education, education of the deaf, and correction of language disorders. Computer applications, forensic applications. Topics vary with each offering.

Ling 5101. Language Types and Linguistic Universals. (3 cr. Prereq–3001 or 3011 or 5001 or #) Conceptualizations of languages and language types; cross-linguistic similarities and universals of language, and their explanation.

Ling 5105. Field Methods in Linguistics I. (4 cr. Prereq–5201, 5302 or 5203 or #) Techniques for obtaining and analyzing linguistic data from unfamiliar languages through direct interaction with a native speaker.

Ling 5106. Field Methods in Linguistics II. (4 cr. Prereq–5105) Techniques for obtaining and analyzing linguistic data from unfamiliar languages through direct interaction with a native speaker.

Ling 5201. Introduction to Syntax. (3 cr. Prereq–3001 or 3011 or 5001 or #) Examination of syntactic phenomena and constructions in a variety of languages; principles of grammar construction and evaluation; syntactic theories as instruments of grammatical analysis.

Ling 5202. Syntactic Theory. (3 cr. Prereq–5201) A thorough foundation in modern syntactic theory through the investigation of a number of syntactic phenomena in various languages. Emphasizes syntactic argumentation and the development of constraints on grammar formalisms.

Ling 5205. Semantics. (3 cr. Prereq–5202 or #) Analysis of sentence meaning with attention to semantic properties and relations such as analyticity, entailment, quantification, and generativity. Philosophical background; formal techniques of semantic analysis; how sentence meaning depends on word meaning, syntax, and context. The role of semantics in grammatical theory.

Ling 5206. Linguistic Pragmatics. (3 cr. Prereq–5201, 5205 or #) The analysis of linguistic phenomena in relation to beliefs and intentions of language users; speech act theory, conversational implicature, presupposition, information structure, relevance theory, discourse coherence.

Ling 5301. Introduction to Phonetics. (4 cr. §3301. Prereq–3001 or 3011 or 5001 or #) Phonetic analysis and transcription of speech. Exploration of articulatory and acoustic correlates of speech sounds. Extensive practice transcribing and analyzing phonetics. Emphasis on narrow transcription of human speech. One section focuses on universal phonetics, another provides emphasis on English.

Ling 5302. Introduction to Phonology. (3 cr. Prereq–5301) Concepts and types of information needed for describing patterns in the sounds of words, for all speakers of all human languages, including current theoretical frameworks. Extensive practice identifying and analyzing phonological patterns in the words of a language.

Ling 5303. Phonological Theory. (3 cr. Prereq–5302 or #) Further exploration of the phonology of human languages. The course will prepare students to read papers in the literature and to do informed research in phonology.

Ling 5461. Conversation Analysis. (3 cr. §5pCh 5461. Prereq–3001 or 3011 or 5001 or #) Discourse processes. Application of concepts through conversation analysis.

Ling 5462. Field Research in Spoken Language. (3 cr. §5pChs 5462. Prereq–5461 or §5pCh 5461 or #) Transcribing and analyzing talk and movement related to talk. Applying concepts to recorded conversations.

Ling 5501. Introduction to Language Acquisition. (3 cr. Prereq–3001 or 3011 or 5001 or #) Overview of first and second language acquisition. Does not fulfill degree requirements for majors in linguistics or the MA in ESL.

Ling 5505. Introduction to Second Language Acquisition. (3 cr. Prereq–3001 or 3011 or 5001, a course on phonological and grammatical structure of a language) Introduction to research on the language and learning processes of second-language learners: the linguistic structure of their interlanguage, the cognitive and social factors which influence their acquisition of a new language.

Ling 5601. Introduction to Historical Linguistics. (3 cr. §3601. Prereq–3001 or 3011 or 5001) Historical change in phonology, syntax, semantics and the lexicon; linguistic reconstruction; genetic relationship among languages.

Ling 5701. Sociolinguistics. (3 cr. Prereq–3001 or 3011 or 5001 or #) Social determinants of linguistic diversity, variation, and change. Topics may include social and regional dialects, language style and register, style-shifting and code-switching, the quantitative study of speech, linguistic and social inequality.

Ling 5721. Bilingualism. (3 cr. Prereq–3001 or 3011 or 5001 or #) Sociolinguistic theory and methods in the study of bilingualism; language ecology in multilingual societies; language and language behavior in the bilingual individual; language in ethnic conflict; implications for public policy and planning.

Ling 5801. Introduction to Computational Linguistics. (3 cr. Prereq–3001 or 3011 or 5001 or #) Methods and issues in computer understanding of natural language. Programming languages and their linguistic applications. Lab projects.

Ling 5802. Computational Linguistics. (3 cr. Prereq–5801 or #) Computer processing of natural language. Applications to such areas as speech recognition and information retrieval.

Ling 5900. Topics in Linguistics. (1-4 cr [max 12 cr. Prereq–#] Topics vary. See Class Schedule.

Ling 5931. Fundamentals of Contemporary English. (3 cr. Prereq–3001 or 3011 or 5001 or #) Word and sentence structure of contemporary English.

Ling 5932. Descriptive Studies of Modern English. (3 cr. Prereq–3001 or 3011 or 5001, 5201 or 5931 or #) Studies of selected aspects of the morphology, syntax, and/or semantics/pragmatics of modern English with emphasis on analysis of written or recorded texts.

Ling 5993. Directed Study. (1-3 cr [max 10 cr. Prereq–A, L]) Directed study for Linguistics.

Management (Mgmt)

Department of Strategic Management
Curtis L. Carlson School of Management


Mgmt 3014. Topics in International Business, Government, and Society. (4 cr; A-F only) Selected topics.


Mgmt 3070. Topics in Management. (4 cr; A-F only. Prereq–At least 60 cr (completed or in progress)) Selected topics.

Mgmt 3080. Topics in Ethics. (4 cr; A-F only. Prereq–At least 60 cr (taken or in progress)) Topics vary with each offering.

Mgmt 3090. Topics in Leadership. (4 cr; A-F only. Prereq–At least 60 cr (completed or in progress)) Selected topics.

Mgmt 4002. Managerial Psychology. (4 cr; A-F only) Behavioral principles, methods, and skills that underlie and compose dimensions of managerial competence and contribute to managers' effectiveness in preventing and solving problems within and between individuals and groups; development of human resource skills management needs based partially on experiential exercises.

Mgmt 4004W. Business Policy: Strategy Formulation and Implementation. (3 cr; A-F only. Prereq–90 credits; completion of business core courses) Integrative perspective on overall direction of the enterprise involving both choice of products and markets and selection of organization structures and management styles; case analysis involving the identification of key issues, evaluation of options, and making recommendations under conditions of uncertainty and incomplete information.

Mgmt 4005. Managing the Multinational Business. (4 cr; A-F only. Prereq–BGS 3040) Structures/strategies of global business. Personnel, technology, and operations in host nations. Challenges unique to management of multinational firm. May include topics such as comparative culture, trade, and ethics.

Mgmt 4006. Small Business Management. (4 cr; A-F only. Prereq–3001, CSOM upper div) Role of small business, alternative entry strategies, functional expertise required as a firm competes in its environment.

Mgmt 4008. Entrepreneurial Management. (4 cr; A-F only) Assessing the opportunities and managing the constraints in developing new business; structuring the venture, pursuing the critical issues, and obtaining the skills needed to succeed. Management, operations, marketing, financial, legal, and competitive issues. The business plan for start-ups, buyouts, franchises, and the family firm.

Mgmt 5004. Negotiations. (2 cr; A-F only) Art and science of securing agreements between two or more parties who are interdependent and who are seeking to maximize their own outcomes; understanding individual, group, and organizational behavior in the context of these competitive situations; theory and process of negotiation applied to broad spectrum of problems faced by managers and professionals.

Course Descriptions

Manufacturing Technology (MT)

College of Continuing Education

MT 4001. Manufacturing Cost Accounting, Analysis, and Control. (3 cr; A-F only)

MT 4011. Design of Manufacturing Systems and Simulation. (3 cr; A-F only)

MT 4012. Manufacturing Processes. (3 cr; A-F only)
Description/modeling of commonly used manufacturing processes. Process descriptions, process capabilities/performance, process models relating process parameters to part/process characteristics, process control.

MT 4015. Quality Engineering. (3 cr; A-F only)

MT 4021. Properties of Materials. (3 cr; A-F only)

MT 4025. Computer Integrated Manufacturing. (3 cr; A-F only)

MT 4031. Engineering Materials Processing I. (3 cr; A-F only)

MT 4032. Engineering Materials Processing II. (3 cr; A-F only)

MT 4041. Fluid Mechanics. (3 cr; A-F only)
Pressure/flow measurements, hydrostatic force, continuity/momentum equations, flow in conduits, velocity distribution, drag force, pump calculations, flow through porous media.

MT 4042. Manufacturing Automation. (3 cr; A-F only)
CNC programming, computer-aided manufacturing (CAM), flexible automations, machining centers, robotics, programmable controllers, systems, tools, work holding devices.

MT 4102. Machine Control. (3 cr; A-F only)
Discrete control, digital control logic, sequential and feedback control, programmable logic controllers, stepper motors, other devices. Motion control methods, performance. Control languages/techniques, systems hierarchy.

MT 4105. Machine Tool Design. (3 cr; A-F only)

MT 4201. Statistical Process Control. (3 cr; A-F only)

MT 4301. Design and Analysis of Experiments. (3 cr; A-F only)
Introduction to applications of statistical methods used by industrial researchers to aid in solving industrial problems. Analysis of means, analysis of variance, factorial designs, fractional factorial (screening) designs. Industrial case studies. Experience at local industries when available.

MT 4501. Manufacturing Product/System Design I. (3 cr; A-F only)
Student teams develop a part or product from requirement definition through prototype fabrication. Definition of product requirements, development of product/tooling design, analysis, definition, fabrication process, development of quality assurance plan, fabrication of prototype, inspection/testing. Capstone project.

MT 4511. Manufacturing Product/System Design II. (3 cr; A-F only)
Continuation of Manufacturing Product/System Design I. Broader experience in manufacturing product and system design. Focuses on involving other stakeholders in design/production of a product. Products from student's workplace, teamwork. Final report, Capstone project.

Marathi (Mar)

Department of Asian Languages and Literatures
College of Liberal Arts

Mar 1101. Beginning Marathi. (4 cr. §3101)
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Mar 1102. Beginning Marathi. (4 cr. §3102)
Prereq—1101 or equiv or # Emphasis on developing proficiency in all four language modalities—listening, reading, speaking, and writing.

Mar 3101. Beginning Marathi. (4 cr. §1101)
Basic listening, speaking, reading, and writing skills. Emphasis on the development of communicative competence.

Mar 3102. Beginning Marathi. (4 cr. §1102)
Prereq—3101 or equiv or # Emphasis on developing proficiency in all four language modalities—listening, reading, speaking, and writing.

Mar 3131. Intermediate Marathi. (4 cr. Prereq—1102 or 3102 or equiv or # Speaking and comprehension; development of reading and writing skills based on Marathi-language material.

Mar 3132. Intermediate Marathi. (4 cr. Prereq—3131 or equiv or # Speaking and comprehension; development of reading and writing skills based on Marathi-language material.

Mar 5992. Directed Readings. (3-5 cr [max 12 cr]
Prereq—A, # Individually guided reading or study of modern Marathi texts.

Mar 5994. Directed Research. (3-5 cr [max 12 cr]
Prereq—A, # Directed research on a subject agreed upon by student and instructor.

Marketing (Mktg)

Department of Marketing and Logistics Management

Curtis L. Carlson School of Management

Mktg 3001. Principles of Marketing. (2 cr; A-F only. Prereq—Econ 1101, 50 cr)
Introduction to terms, concepts, and skills for analyzing marketing problems. Factors outside the organization affecting its product, pricing, promotion, and distribution decisions. Cases from actual organizations. Requires written marketing plan, done individually or as team.

Mktg 3010. Marketing Research. (4 cr; A-F only. Prereq—3001) Methods for collecting/analyzing data to solve marketing problems. Research design, secondary/primary data collection, sample design, data analysis.

Mktg 4020. Advanced Logistics and Supply Chain Management. (2 cr; A-F only. Prereq—3001) Analysis of the flow of physical product through channels of distribution and the linkages between the process of controlling such physical flows and the major functions of the firm, e.g., finance, marketing, and operations. Emphasis on organizing the interactions between firms and developing an integrative supply chain management strategy.

Mktg 4030. Selling and Sales Management. (4 cr; A-F only. Prereq—3001) Emphasizes understanding the role of the sales manager to develop and implement a sales force plan that is an integral part of a company’s marketing strategy. Special attention on the impact of the sales manager’s decisions on the behavior of an individual sales person.

Mktg 4040. Buyer Behavior. (4 cr; A-F only. Prereq—3001) Application of the behavioral sciences to understanding buyer behavior. Topics include perception, memory, affect, learning, persuasion, motivation, behavioral decision theory, social and cultural influences, and managerial implications.

Mktg 4050. Integrated Marketing Communications. (4 cr; A-F only. Prereq—3001) Management of the communication aspect of marketing strategy. Emphasis on advertising, sales promotion, public relations, and direct marketing. Topics include setting communications objectives and budgets, media selection, creative strategy, and sales promotion techniques.

For definitions of course numbers, symbols, and abbreviations, see page 296.
**Materials Science**  
**Department of Chemical Engineering and Materials Science**  
**Institute of Technology**

**MatS 1001. Advances in Chemical Engineering and Materials Science.** (1 cr; S-N only. Prereq—Recommended for [chemical engineering, materials science/engineering] majors)  
Introduction to chemical engineering, materials science/engineering, and selected examples of important advances in both fields. Design problems, career opportunities. Lectures, demonstrations, interactive exercises.

**MatS 2001. Introduction to the Science of Engineering Materials.** (3 cr; Prereq—2nd year IT [no credit for MatS majors])  
Introduction to structure-property relationships of engineering materials. Atomic structure and bonding; crystal structures; imperfections in solids; strength of materials; mechanical properties; phase transformations; heat treatment and control of microstructures; materials selection and design. Integrates properties of metals, ceramics, polymers, and composites. Laboratory experiments deal with material strength, creep, and fatigue of engineering alloys, and heat treatment of steel and aluminum.

**MatS 2601. Introduction to Materials Science (Honors).** (3 cr. Prereq—It lower div honors program)  
Physical principles which govern materials properties at the microscopic scale. Starting from the atomic structure and interatomic bonding, it moves to more complex, physical properties: mechanical, electrical, optical, and thermodynamical properties.

**MatS 3011. Introduction to Materials Science and Engineering.** (3 cr. Prereq—Chem 1021, Math 1272 or 1372, Phys 1302)  
Builds progressively from electrons to atoms to bonding to crystal structures. Defects, X-ray diffraction of phase diagrams, microstructure as a basis for understanding mechanical/electrical properties. Metals, polymers, ceramics, semiconductors, composites.

**MatS 3013. Advances in Materials Science and Engineering.** (3 cr. Prereq—MatS 3011, [MatS or ChEn upper div or] 1 cr)  

**MatS 3014. Industrial Assignment I.** (2 cr; A-F only. Prereq—MatS upper div, completion of required courses in MatS program during fall sem of 3rd yr; GPA of at least 2.88, regis in co-op program)  
Industrial work assignment in engineering co-op program. Formal written report.

**MatS 3801. Structural Characterization Lab.** (2 cr; A-F only. Prereq—[Grade of at least C in 3011, MatS upper div or] 1 cr)  

**MatS 3851W. Materials Properties Lab.** (2 cr; A-F only. Prereq—[Grade of at least C in 3011, MatS upper div or] 1 cr)  

**MatS 4001. Thermodynamics of Materials.** (4 cr. Prereq—MatS upper div)  

**MatS 4002. Mass Transport and Kinetics.** (4 cr. Prereq—CE 3101, upper div MatS)  

**MatS 4013. Electrical and Magnetic Properties of Materials.** (3 cr. Prereq—[Grade of at least C in 3011, upper div (MatS or ChEn)] or 1 cr)  

**MatS 4041. Industrial Assignment II.** (2 cr; A-F only. Prereq—3001, completion of required courses in MatS program through fall sem of 4th yr, GPA of at least 2.80, registration in co-op program)  
Industrial assignment in engineering co-op program. Application of materials science principles to engineering design problems in an industrial work environment. Formal written report.

**MatS 4212. Ceramics.** (3 cr. Prereq—[Grade of at least C in 3011, [MatS or ChEn] s] or 1 cr)  

**MatS 4214. Polymers.** (3 cr. Prereq—[Grade of at least C in 3011, [MatS or ChEn] s] or 1 cr)  
Polymer structure-property relations: structure/morphology of crystalline/amorphous state. Crystallization kinetics. Vitrification and glass transition. Mechanical properties; failure, permeability, optical/electrical properties, polymer composites, effect of processing on properties.

**MatS 4221. Materials Design and Performance.** (4 cr. Prereq—MatS 3012 or 1 cr)  
Thermal and mechanical processing to control properties, selection of fabrication tests for electronic applications and other applications, analysis of results of performance, analysis of failure in metallurgical structures by use of fracture mechanics methodology. Laboratory experiments involve creep, fracture, fatigue, optical and SEM metallography, surface science analysis, and statistics.

**MatS 4301W. Polymer Laboratory.** (4 cr. Prereq—MatS 4212 and 4214)  
Casting, solidification and plastic forming of metals; powder processing, forming operations, sintering of ceramics; and processing of thermoplastic and thermostom polymers. Computer applications of data collection and reduction. Additional laboratory projects available to graduate students.

**MatS 4400. Senior Design Project.** (3 cr. §4401. Prereq—Sr MatS major)  
Integration of coursework and lab experiences by applying scientific and engineering principles to comprehensive design project. Individual or team work on a project with faculty guidance. Areas of project selection typically include electronic materials, polymers, metals or ceramics. Written report and oral presentation required.

**MatS 4401. Senior Design Thesis I.** (2 cr; A-F only. §4400. Prereq—MatS senior, GPA of at least 3.00, project approval by faculty advisor)  
First semester of 2-semester thesis project. Research and design work directed by faculty member in Department of Chemical Engineering and Materials Science. Written reports are due at midterm and end of semester. At least one research presentation must be given.

**MatS 4402. Senior Design Thesis II.** (2 cr; A-F only. Prereq—4401)  

**MatS 4511W. Corrosion and Electrochemistry of Corrosion.** (4 cr. Prereq—MatS 3011 or 1 cr, upper div IT or grad)  
Electrochemical thermodynamics, electrochemical kinetics, theory of aqueous corrosion, theory of high temperature oxidation; specific topics include general corrosion, passivation, pitting, galvanic protection/corrosion, environmental degradation of mechanical properties, corrosion of electronic components, growth of oxide scales by diffusion, materials selection and design. Computers used to collect lab data.

**MatS 4591. Independent Study in Materials Science.** (1-3 cr [max 12 cr]. Prereq—Upper div mat sci)  
Library, theoretical, laboratory or design studies of scientific or engineering topics in materials science for an individual or a small group of students. Course content and credits by arrangement with professor. Design credits available if arranged with professor. May be used for upper divisionHonors Program experience if arranged with professor.

**MatS 4593. Directed Study in Materials Science.** (1-4 cr [max 12 cr]. Prereq—Upper div MatS)  
This course can take two forms: (a) Library, theoretical or design studies of scientific or engineering topics in materials science for an individual or a small group of students. Course content and credits by arrangement with professor. Design credits available if arranged with professor. (b) Special topics course offered only once, e.g., by a visiting professor.

**MatS 4594. Directed Research in Materials Science.** (1-3 cr [max 12 cr]. Prereq—Upper div MatS)  
Research studies of scientific or engineering topics in materials science for an individual or small group of students. Course content and credits by arrangement with professor. Design credits available if arranged with professor. May be used for upper division Honors Program experience if arranged with professor.

**MatS 5221. Introduction to Polymer Chemistry.** (3 cr; A-F only. Prereq—[3501, Chem 2302] or 1 cr)  
Condensation, radical, ionic, condensation, ring-opening, metal-catalyzed polymerizations. Chain conformation, solution thermodynamics, molecular weight characterization, physical properties.

**MatS 5223W. Polymer Laboratory.** (2 cr; A-F only. Prereq—5221 or Chem 5221 or 8221 or 1 cr)  
Math 1008. Trigonometry. (3 cr; A-F only.
Pre-req: Plane geometry, two yrs high school algebra or
[or C or better in GC 0731]])

Analytic trigonometry, identities, equations,
properties of trigonometric functions, right/oblique triangles.

Math 1031. College Algebra and Probability. (3 cr.
§1031, §1051, §1055. Pre-req–3 yrs high school math or
grade of at least C in GC 0731)

Algebra, analytic geometry explored in greater depth
than is usually done in three years of high school mathematics.
Additional topics from combinations,
permutations, probability.

(1 cr; A-F only.
Pre-req–1031 or 1151 or 1155)

For students who need probability/permutations/
combinations portion of 1031. Meets with 1031, has
same grade/work requirements.

Math 1051. Precalculus I. (3 cr.
§1031, §1151. Pre-req–3 yrs high school math or
placement test or grade of at least C in GC 0731)

Algebra, analytic geometry, exponentials, logarithms,
beyond usual coverage found in three-year high school mathematics program.

Math 1131. Finite Mathematics. (3 cr.
Pre-req–3 1/2 yrs high school math or grade of at least C in [1031 or 1051])

Financial mathematics, probability, linear algebra,
linear programming, Markov chains, some elementary computer programming.

Math 1142. Short Calculus. (4 cr.
§1271, §1281, §1371, §1571. Pre-req–3 1/2 yrs high school math or grade of at least C in [1031 or 1051])

Derivatives, integrals, differential equations, partial
derivatives, maxima/minima of functions of several variables
covered with less depth than full calculus.
No trigonometry included.

Math 1143. Introduction to Advanced Mathematics. (4 cr.
A-F only.
Pre-req–1142 or 1272 or 1372 or [recommended especially for students in [social/
biological sciences, business]])

Topics that are covered in more depth in 2243 and
2263, plus probability theory. Matrices, eigenvectors,
conditional probability, independence, distributions,
standard basic tools, linear regression. Linear
differential equations and systems of differential equations. Multivariable differentiability and
linearization.

Math 1151. Precalculus II. (3 cr.
§1155. Pre-req–3 1/2 yrs high school math or placement exam or grade of at least C- in [1031 or 1051])

Algebra, analytic geometry, trigonometry, complex
calculations, beyond usual coverage found in three-year high school mathematics program.

Math 1155. Intensive Precalculus. (5 cr.
§1031, §1051, §1151.
Pre-req–3 yrs high school math or placement
exam or grade of at least C- in GC 0731)

Differential calculus of functions of a single variable. Introduction to integral calculus of a single variable,
differential equations. Applications: max-min,
related rates, area, volume, arc-length.

A-F only.
§1151 or 1272, §1271, §1371, §1571.
Pre-req–[four yrs high school math including trigonometry] or
[or grade of at least C- in [1151 or 1155] or placement exam,] (§ or §)

Differential calculus of single-variable functions,
basics of integral calculus. Applications emphasizing
biological sciences.

Math 1228. Calculus With Biological Emphasis II. (4 cr.
A-F only.
§1372.
Pre-req–[1272 or 1281 or 1371] with grade of at least C-]
(§ or §)

Techniques of integration. Calculus involving
transcendental functions, polars coordinates. Taylor
polynomials, vectors/curves in space, cylindrical/
spherical coordinates.

A-F only.
§1151 or 1272, §1271, §1371, §1571.
Pre-req–[four yrs high school math including trigonometry] or
[or grade of at least C- in GC 0731])

Differential calculus of single-variable functions,
basics of integral calculus. Applications emphasizing
biological sciences.

Math 1282. Calculus With Mathematical Emphasis II. (4 cr.
A-F only.
§1372, §1572.
Pre-req–[1272 or 1281 or 1371 with grade of at least C-]
(§ or §)

Techniques/applications of integration,
differential equations/systems, matrix algebra,
basics of multivariable calculus. Applications emphasizing
biology.

Math 1371. IT Calculus I. (4 cr.
§1271, §1571.
Pre-req–IT, background in [precalculus, geometry, visualization of functions/graphs],
§ familiarity with graphing calculators recommended)

Differentiation of single-variable functions, basics of
integration of single-variable functions. Applications:
max-min, related rates, area, curve-sketching.
Emphasizes use of calculator, cooperative learning.

Math 1372. IT Calculus II. (4 cr.
§1272, §1282, §1572.
Pre-req–IT, grade of at least C- in 1371)

Techniques of integration. Calculus involving
transcendental functions, polars coordinates, Taylor
polynomials, vectors/curves in space, cylindrical/
spherical coordinates. Emphasizes use of calculators,
cooperative learning.

Math 1471H. Honors Calculus I for Secondary Students. (5 cr.
Pre-req–[Honors]
Differential/integration of single-variable functions.
Emphasizes concepts/explorations.

Math 1472H. Honors Calculus II for Secondary Students. (5 cr.
Pre-req–1471H)

Sequences/series, vector functions, differentiation in
multivariable calculus. Introduction to first-order systems of differential equations. Emphasizes
concepts/explorations.

Math 1473H. Honors Calculus III for Secondary Students. (2 cr.
Pre-req–Honors)
Accelerated honors sequence for selected
teachingly talented high school students.
Introduction to linear methods and first order
differential equations.

Math 1474H. Honors Calculus IB for Secondary Students. (3 cr.
Pre-req–Honors)
Accelerated honors sequence for selected
mathematically talented high school students.
Multivariable calculus through differentiation.
Focuses on proofs and formal reasoning.

Math 1571H. Honors Calculus I. (4 cr.
§1271, §1371.
Pre-req–IT Honors offer approval)

Differential/integration of functions of a single variable.
Emphasizes hard problem-solving rather than
theory.

Math 1572H. Honors Calculus II. (4 cr.
Pre-req–Grade of at least C- in 1571.
IT Honors Office approval; parts of this sequence may be taken for cr by students who have
taken non-honors math classes)

Continuation of 1571. Infinite series, differential
calculus of several variables, introduction to linear
algebra.

Pre-req–1272 or equiv)

Actuarial science as a subject and career. Guest
lectures by actuaries. Resume preparation and
interviewing skills. Review and practice for actuarial
tests.

Math 2243. Linear Algebra and Differential Equations. (4 cr.
§2273, §2573.
Pre-req–1272 or 1282 or 1372 or 1572)

Linear algebra: basis, dimension, matrices,
eigenvalues/eigenvectors. Differential equations:
first-order linear, separable, second-order linear with
constant coefficients; linear systems with constant
coefficients.

Math 2263. Multivariable Calculus. (4 cr.
§2374, §2573.
Pre-req–1272 or 1372 or 1572)

Derivative as a linear map. Differential/integral
calculus of functions of several variables, including
change of coordinates using Jacobians. Line/surface
integrals. Gauss, Green, Stokes theorems.

Math 2283. Sequences, Series, and Foundations. (3 cr.
§2283.
Pre-req–[§2243 or 2263 or 2373 or 2374])

Introduction to mathematical reasoning used in
advanced mathematics. Elements of logic.

Mathematical induction. Real number system.
General, monotone, recursively defined sequences.
Convergence of infinite series/sequences. Taylor’s
series. Power series with applications to differential
equations. Newton’s method.

Math 2373. IT Linear Algebra and Differential Equations. (4 cr.
§2374, §2573.
Pre-req–[1272 or 1282 or 1372 or 1572])

Linear algebra: basis, dimension, eigenvalues/
eigenvectors. Differential Equations: linear
equations/systems, phase space, forcing/resonance,
qualitative/numerical analysis of nonlinear systems,
Laplace transforms. Emphasizes use of computer
technology.

Math 2374. IT Multivariable Calculus and Vector Analysis. (4 cr.
§2263.
Pre-req–[1272 or 1282 or 1372 or 1572])

IT Derivative as a linear map. Differential/integral
calculus of functions of several variables, including
change of coordinates using Jacobians. Line/surface
integrals. Gauss, Green, Stokes theorems.

Emphasizes use of computer technology.

Math 2473H. Honors Calculus III for Secondary Students. (3 cr.
Pre-req–1472H)
Multivariable integration, vector analysis,
nonhomogeneous linear equations, nonlinear systems of
equations. Emphasizes concepts/explorations.

Math 2474H. Advanced Topics for Secondary Students. (3 cr.
Pre-req–2473H)

Topics may include linear algebra, combinatorics,
advanced differential equations, probability/statistics,
numerical analysis, dynamical systems, topology/
geometry. Emphasizes concepts/explorations.

Math 2573H. Honors Calculus III. (4 cr.
Pre-req–1572 or
IT Honors office approval)

Integral calculus of several variables. Vector analysis,
including theorems of Gauss, Green, Stokes.

Math 2574H. Honors Mathematics IV. (4 cr.
Pre-req–2573 or equiv.
IT Honors office approval)

Advanced linear algebra, differential equations.
Additional topics as time permits.
Math 5068. Actuarial Mathematics II. (4 cr.
Multiple decrement insurance, pension valuation. Expense analysis, gross premium, reserves. Problem of withdrawals. Regulatory reserving systems. Minimum cash values. Additional topics at instructor’s discretion.

Math 5075. Mathematics of Options, Futures, and Derivative Securities I. (4 cr. Prereq—Two yrs calculus, basic computer skills) Mathematical background (e.g., partial differential equations, Fourier series, computational methods, Black-Scholes theory, numerical methods— including Monte Carlo simulation). Interest-rate derivative securities, exotic options, risk theory. First course of two-course sequence.

Math 5076. Mathematics of Options, Futures, and Derivative Securities II. (4 cr. A-F only. Prereq—5075) Mathematical background such as partial differential equations, Fourier series, computational methods, Black-Scholes theory, numerical methods (including Monte Carlo simulation), interest-rate derivative securities, exotic options, risk theory.

Math 5165. Mathematical Logic I. (4 cr. Prereq—2283 or 3283 or Phil 5201 or CSci course in theory of algorithms or #) Theory of computability: notion of algorithm, Turing machines, primitive recursive functions, recursive functions, Kleen normal form, recursion theorem. Propositional logic.


Math 5285H. Honors: Fundamental Structures of Algebra I. (4 cr. Prereq—2243 or 2373 or 2573[)] Canonical form, fundamental theorems of algebra, Galois theory, advanced topics in algebra. Review of matrix theory, linear algebra, vector spaces, linear transformations over abstract fields. Group theory, including normal subgroups, quotient groups, homomorphisms, class equation, Sylow’s theorems. Specific examples: permutation groups, symmetry groups of geometric figures, matrix groups.

Math 5286H. Honors: Fundamental Structures of Algebra II. (4 cr. Prereq—5285) Ring/module theory, including ideals, quotients, homomorphisms, domains (unique factorization, Euclidean, principal ideal), fundamental theorem for finitely generated modules over euclidean domains, Jordan canonical form. Introduction to field theory, including finite fields, algebraic/ transcendental extensions, Galois theory.

Math 5335. Geometry I. (4 cr. Prereq—2243 or 2373 or 2573[)] Advanced two-dimensional Euclidean geometry from a vector viewpoint. Theorems/problems about triangles/circles, isometries, similarity, Euclid’s axioms. Hyperbolic geometry, how it compares with Euclidean geometry.
Math 5336. Geometry II. (4 cr. Prereq.–5335)
Projective geometry, including: relation to Euclidean geometry. Finite geometries, fundamental theorem of projective geometry. N-dimensional Euclidean geometry from a vector viewpoint. Emphasizes N=3, including: polyhedra, spheres, isometries.

Math 5345. Introduction to Topology. (4 cr. Prereq.–2263 or 2374 or 2573; §2283 or §2574 or §3283)
Set theory, Euclidean/metric spaces. Applications of basic topology, including compactness/connectedness.

Math 5378. Differential Geometry. (4 cr. Prereq.–2263 or 2374 or 2573; §2283 or §2574 or §3283 or §3545)
Basic geometry of curves in plane and in space, including Frenet formulas, theory of surfaces, differential forms, Riemannian geometry.

Math 5385. Introduction to Computational Algebraic Geometry. (4 cr. Prereq.–2263 or 2374 or 2573)
Geometry of curves/surfaces defined by polynomial equations. Emphasizes concrete computations with polynomials using computer packages, interplay between algebra and geometry. Abstract algebra presented as needed.

Math 5407. Introduction to the Mathematics of Waves I. (4 cr. Prereq.–2243 or 2374 or 2573; §2283 or §2574 or §3283 or §3547; recommended)

Math 5481. Mathematics of Industrial Problems I. (4 cr. Prereq.–2243 or 2374 or 2573; §2283 or §2574 or §3283; familiarity with some programming language)
Topics in industrial math, including crystal precipitation, air quality modeling, electron beam lithography. Problems treated both theoretically and numerically.

Math 5482. Mathematics of Industrial Problems II. (4 cr. Prereq.–2243 or 2374 or 2573; §2283 or §2574 or §3283 or §3547; familiarity with some programming language)
Topics in industrial math, including color photography, catalytic converters, photocopying.

Math 5485. Introduction to Numerical Methods I. (4 cr. Prereq.–2243 or 2374 or 2573; some computer skills recommended)
Solution of nonlinear equations in one variable. Interpolation, polynomial approximation, numerical integration/differentiation, numerical solution of initial-value problems.

Math 5486. Introduction to Numerical Methods II. (4 cr. Prereq.–5485)


Math 5488. Computational Methods for Differential and Integral Equations in Engineering and Science II. (4 cr. Prereq.–5487)

Math 5525. Introduction to Ordinary Differential Equations. (4 cr. Prereq.–2243 or 2374 or 2573; §2283 or §2574 or §3283)

Math 5535. Dynamical Systems and Chaos. (4 cr. Prereq.–2243 or 2374 or 2573; §2263 or §2574 or §3283)
Dynamical systems theory. Emphasizes iteration of one-dimensional mappings. Fixed points, periodic points, stability, bifurcations, symbolic dynamics, chaos, fractals, Julia/Mandelbrot set.

Math 5583. Complex Analysis. (4 cr. Prereq.–2263 or 2374 or 2573)

Math 5587. Elementary Partial Differential Equations I. (4 cr. Prereq.–2243 or 2374 or 2573; §2263 or §2574 or §3283)
Emphasizes partial differential equations w/physical applications, including heat, wave, Laplace’s equations. Interpretations of boundary conditions. Characteristics, Fourier series, transforms, Green’s functions, images, computational methods. Applications include wave propagation, diffusions, electrostatics, shocks.

Math 5588. Elementary Partial Differential Equations II. (4 cr. A-F only. Prereq.–2243 or 2374 or 2573; §2263 or §2574 or §3283; 5587 not a prereq but see instructor)

Math 5615H. Honors: Introduction to Analysis I. (4 cr. Prereq.–2243 or 2374; §2283 or §3283 or §3287)

Math 5616H. Honors: Introduction to Analysis II. (4 cr. Prereq.–5615)

Math 5651. Basic Theory of Probability and Statistics. (4 cr. §Stat 5101. Prereq.–2263 or 2374 or 2573; §2243 or §2573; §2283 or §2574 or §3283; recommended)
Logical development of probability, basic issues in statistics. Probability spaces, random variables, their distributions/expected values. Law of large numbers, central limit theorem, distributions, sampling, sufficiency, estimation.

Math 5652. Introduction to Stochastic Processes. (4 cr. Prereq.–2243 or 2373 or 2573; §5651 or Stat 5101)
Random walks, Markov chains, branching processes, martingales, queuing theory, Brownian motion.

Math 5654. Preparatory Filtering. (4 cr. Prereq.–2243 or 2373 or 2573; §5651 or Stat 5101)

Math 5705. Enumerative Combinatorics. (4 cr. Prereq.–2243 or 2373 or 2573; §2263 or §2574 or §3283 or §3287)
Basic enumeration, bijections, inclusion-exclusion, recurrence relations, ordinary/exponential generating functions, partitions, Polya theory. Optional topics include trees, asymptotics, listings algorithms, rook theory, involutions, tableaux, derangements, permutation statistics.

Math 5707. Graph Theory and Non-enumerative Combinatorics. (4 cr. Prereq.–2243 or 2373 or 2573; §2263 or §3283 or experience in writing proofs) highly recommended
Basic topics in graph theory: connectedness, Eulerian/Hamiltonian properties, trees, colorings, planar graphs, matchings, flows in networks. Optional topics include graph algorithms, Latin squares, block designs, Ramsey theory.

Math 5711. Linear Programming and Combinatorial Optimization. (4 cr. Prereq.–2243 or 2373 or 2573)

Math 5900. Tutorial in Advanced Mathematics. (1-6 cr. max 120 cr; A-F only)
Individually directed study.

Course Descriptions

Mechanical Engineering (ME)

Department of Mechanical Engineering
Institute of Technology

ME 2011. Introduction to Engineering. (4 cr.; A-F only. Prereq.–11 lower div)
Develops skills critical for practicing engineers. Core disciplinary areas of mechanical engineering and engineering design. Extensive exposure to visual, written and oral communication forms, and computer-based design tools. Substantial design projects, including prototype construction.

ME 3031. Basic Mechanical Measurements Laboratory. (4 cr.; A-F only. Prereq.–3321, §3322, §4521, upper div ME)
Experimental methods, instrumentation for mechanical measurements, statistical estimates of experimental uncertainty, calibration, signal conditioning, selected transducers for mechanical measurements, data acquisition/processing, presentation of results. Mathematical tools of temperature, pressure, humidity, stress-strain, force, velocity, and flow/radiative properties.

ME 3041. Industrial Assignment I. (2 cr.; A-F only. Prereq.–ME upper div, regis in ME co-op program)
Industrial work assignment in engineering intern program. Evaluation based on student’s formal written report covering the semester’s work assignment.


ME 3222. Design and Manufacturing II. (4 cr.; A-F only. Prereq.–Upper div ME student, 3221, CSci 1113 or equiv.)
Selection of standard mechanical components such as bearings, gears, and fasteners. Analysis and synthesis of motion in machines. Displacement, velocity, and acceleration of mechanisms. Machine design project; apply lecture topics to develop new machines that fulfill customer specifications.


ME 4042. Industrial Assignment II. (2 cr; A-F only. Prereq—ME upper div, regis in ME Co-op program) Industrial work assignment in engineering intern program. Evaluation based on student’s formal written report covering the quarter’s work assignment.

ME 4055W. Extended Design Project. (4 cr; A-F only. Prereq—4054, A-F only. Continuation of 4054 for students wishing to undertake a more substantial design project for an entire year. Permission granted when student takes 4054 and commits to undertake a two-semester design project. Meets with 4054.)

ME 4081H. Mechanical Engineering Honors Thesis I. (2 cr; A-F only. Prereq—Upper div ME honors student, A-F only. Unstructured research course enabling honors students to do independent research supervised by faculty. Selection of suitable topics according to individual interests and faculty approval. Thesis and oral defense.)

ME 4082H. Mechanical Engineering Honors Thesis II. (2 cr; A-F only. Prereq—Upper div ME honors student, A-F only. Unstructured research course enabling honors students to do independent research supervised by faculty. Selection of suitable topics according to individual interests and faculty approval. Thesis and oral defense.)

ME 4131W. Thermal Environmental Engineering Laboratory. (4 cr; A-F only. Prereq—ME upper div or grad student, A-F only. Experiments in psychrometrics, refrigeration, air conditioning, solar energy, indoor air quality, and other topics related to refrigeration, building heating and cooling, and indoor air quality.)

ME 4231. Motion Control Laboratory. (4 cr; A-F only. Prereq—3051, 3221, Microprocessor programming, digital filters, frequency response testing, modeling of electromechanical systems, closed loop velocity and position control, programmable logic controllers, factory automation, open loop position control of a vibratory system using input shaping, closed loop position control using pole placement.


ME 4331W. Thermal Engineering Laboratory. (4 cr; A-F only. Prereq—IT upper div or grad student, 3031, 3321, 3322) Measurement and analysis of heat transfer in single phase, multiphase, and thermal environments. Emphasis on experimental measurements relevant to thermal/fluid systems as well as the statistical design of experiments and uncertainty analysis. Heat exchanger, cycle analysis.

ME 4421W. Energy Conversion Systems Laboratory. (4 cr; A-F only. Prereq—Upper Div ME or grad student, C grade or better in 3031, 3321, 3322 or 3324 with #) Senior lab in which material from courses is applied to analyze the operation and control of engines, power plants, etc. Evaluation of experimental results.

ME 5080. Topics in Mechanical Engineering. (4 cr. Prereq—Upper div IT or grad student, submission of permission form, #) Topics vary each semester.

ME 5090. Advanced Engineering Problems. (1-4 cr. Prereq—ME upper div, #) Special investigations in various fields of mechanical engineering and related areas including an independent study project.

ME 5101. Vapor Cycle Systems. (4 cr; A-F only. Prereq—IT upper div or grad student) Vapor compression and absorption refrigeration systems; heat engine power cycle analysis; regeneration, reheating, compound cycle modifications, combines gas turbine—vapor cycle systems.

ME 5103. Thermal Environmental Engineering. (4 cr; A-F only. Prereq—IT upper div or grad, 3322 or 3323) Thermodynamic properties of moist air, psychrometric charts, HVAC systems; solar energy; human thermal comfort; indoor air quality; heating and cooling loads in buildings.

ME 5105. HVAC System Design. (4 cr; A-F only. Prereq—IT upper div or grad student, 3322 or 3323) Design procedures used for heat exchangers, cooling towers, hydronic systems, and air handling systems. HVAC system design for a commercial building.

ME 5113. Aerosol/Particle Engineering. (4 cr; A-F only. Prereq—IT upper div or grad student) Kinetic theory, definition, theory and measurement of particle properties, electrically charged particle mechanics, particle statistics; Brownian motion and diffusion, coagulation, evaporation and condensation, sampling and transport.

ME 5115. Air Quality and Air Pollution Control. (4 cr; A-F only. Prereq—IT upper div or grad student) Air pollution sources, atmospheric transport, transformations, fate, and emissions control. Air pollution meteorology, dispersion, chemistry of secondary pollutant formation, standards and regulation. Control devices and techniques for gaseous and particulate emissions. Cyclones, electrostatic precipitators, wet and dry scrubbers, combustion modification.

ME 5116. Cleanroom Technology and Particle Monitoring. (4 cr; A-F only. Prereq—IT upper div or grad student) Fundamentals of cleanroom technology for microelectronics manufacturing. airborne and liquid-borne particulate contaminants; particle monitors: optical and condensation particle counters, wafer surface scanner, microscopy, filter performance and testing; cleanroom design and operation; high purity systems; particle detection in processing equipment.


ME 5228. Introduction to Finite Element Modeling, Analysis, and Design. (4 cr; A-F only. Prereq—IT upper div or grad, 3221, AEM 3031, CSci 1113, Mat 5001) Finite elements as principal analysis tool in computer-aided design (CAD); theoretical issues and implementation aspects for modeling and analyzing engineering problems encompassing stress analysis, heat transfer, and flow problems for linear situations. One-, two-, and three-dimensional practical engineering applications.

ME 5231. Digital and Analog Control Laboratory. (4 cr; A-F only. Prereq—ME or AEM upper div or grad student, 5281 or equiv) Lab experiments illustrate and apply control theory to mechanical engineering systems. Emphasis on real-life control design and implementation techniques including dynamic modeling, controller design, analysis and simulation, hardware implementation, measurement techniques, sensor calibration, data acquisition, and processing.

ME 5241. Computer-Aided Engineering. (4 cr; A-F only. Prereq—IT upper div or grad, 3222, CSci 1113 or equiv) Apply computer-aided engineering to mechanical design. Engineering design projects and case studies using computer-aided design, finite element analysis software, design optimization and computer graphical presentation of results.

ME 5243. Advanced Mechanics Design. (4 cr; A-F only. Prereq—Upper Div IT or grad, 3222 or equiv, basic kinematics and dynamics of machines, knowledge of CAD packages such as Pro-E helpful) Analytical methods of kinematic, dynamic, and kinetoelastodynamic analysis and synthesis of mechanisms. Computerized design for function, path, and mechanism generation based on Denavit- Hartenberg theory.


ME 5248. Vibration Engineering (4 cr; Prereq—Upper div IT or grad student, 3281)
Apply vibration theory to design isolate motors, detuning mechanisms, viscoelastic suspensions and structures. Use modal analysis methods to describe free vibrations of complex systems, relating to both theoretical and test procedures.

ME 5281. Analog and Digital Control (4 cr; Prereq—3281)
Continuous and discrete time feedback control systems. Frequency response, stability, poles and zeros; transient responses. Nyquist and Bode diagrams; root locus; lead-lag and PID compensators, Nichols-Ziegler design method. Digital implementation aliasing; computer-aided design and analysis of control system.

ME 5286. Robotics (4 cr; A-F only. Prereq—[3281 or equiv], upper div ME or AEM or CSci or grad student)
Manipulator forward/inverse kinematics, homogeneous transformations, coordinate frames, Jacobian/velocity control, task primitives/programming, computational issues. Determining path trajectories. Reaction forces, manipulator dynamics/control. Vehicle kinematics, dynamics, and guidance. Lab project demonstrates concepts.

ME 5341. Case Studies in Thermal Engineering and Design (4 cr; A-F only. Prereq—IT upper div or grad student, 3321, 3322)
Characteristics of applied heat transfer problems: nature of problem specification, incompleteness of needed knowledge base, accuracy issues. Categories of applied heat transfer problems (e.g., materials processing, turbomachinery, cooling of electronic equipment, biomedical thermal therapeutic devices, heat exchangers, HVAC systems).

ME 5344. Thermodynamics of Fluid Flow with Applications (4 cr; A-F only. Prereq—IT upper div or grad student, 3322, 3321 or upper div or grad student)

ME 5348. Heat Transfer in Electronic Equipment (4 cr; Prereq—Upper div IT or grad student, 3322 or 3324)
Technology trends and packaging needs of microelectronic components; thermal characteristics, heat transfer mechanisms, and thermal failure modes of modern electronic and microelectronic equipment; reliability prediction techniques; thermal stress and strain in layered structures and solder joints.

ME 5351. Computational Heat Transfer (4 cr; A-F only. Prereq—IT upper div or grad student, 3322)
Numerical solution of heat conduction and analogous physical processes. Develop and use a computer program to solve complex problems involving steady and unsteady heat conduction, flow and heat transfer in ducts, flow in porous media, and other special applications.

ME 5361. Plasma-Aided Manufacturing (4 cr; A-F only. Prereq—Upper div IT or grad student, 3322, 3321 or equiv)
Properties of plasmas as a processing medium, process control and system design considerations using specific examples of plasma spray coating, welding, and microelectronics processing.

ME 5381. Biological Transport Processes (4 cr; A-F only. Prereq—CHen 5753, BMen 5310. Prereq—Upper div IT or grad student, transport class [3322 or Chen 5103] or #) Fluid, mass, and heat transport in biological systems. Mass transfer across membranes, fluid flow in capillaries, interstitium, veins and arteries. Biotransport issues in single cells and tissues, artificial organs, membrane oxygenators, and drug delivery applications.

ME 5446. Introduction to Combustion (4 cr; A-F only. Prereq—Upper div IT or grad student, 3321, 3322)
Thermodynamics, kinetics, energy and mass transport, and pollutants in reacting systems. Reactors, laminar and turbulent flames. Ignition, quenching, and flame stability. Diffusion flames. Combustion in reciprocating engines, furnaces, and turbines, with emphasis on internal combustion engine performance and emissions.

ME 5461. Internal Combustion Engines (4 cr; A-F only. Prereq—IT upper div or grad student, C or better in 3322 or 3324)
Basic spark ignition and diesel engine principles, air, fuel-air and actual engine cycles, cycle modeling, combustion and emissions, knock phenomena, air flow and volumetric efficiency, mixture requirements, ignition requirements and performance. Lectures and complementary labs.

ME 5462. Gas Turbines (4 cr; A-F only. Prereq—Upper div IT or grad student, 3321, 3322)
Gas turbine cycles, regeneration, recuperation, reheate, intercooling, combined cycle plants, and thermochemical regeneration. Axial and radial flow compressors and turbines; combustor designs, energy analysis, emissions, and noise. Turbojet, fanjet, turboprop engine performance. Stationary power plants, vehicular propulsion, hybrid vehicles.

Course Descriptions

Medical Technology (MedT)

Department of Laboratory Medicine and Pathology

Medical School

MedT 1010. Orientation in Medical Technology
(1 cr; S-N only. Prereq—Fr)
Orientation to the medical technology (clinical laboratory science) profession.

MedT 4064. Introduction to Clinical Immunohematology
(2 cr; A-F only. Prereq—#)
Principles of blood grouping, antibody identification, compatibility testing, serology, and immunology.

MedT 4065. Introduction to Clinical Immunohematology: Laboratory
(2 cr; A-F only. Prereq—#)
Application of basic methods and techniques in the clinical chemistry lab.

MedT 4082. Applied Clinical Chemistry
(3 cr; S-N only. Prereq—4310, 4311, 4320, 4321)
Application of methods and techniques in clinical chemistry lab.

MedT 4085. Applied Clinical Hematology
(2 cr; S-N only. Prereq—4251, 4252, 4253)
Application of methods and techniques in clinical hematology, morphology, and hemostasis.

MedT 4086. Applied Clinical Immunohematology
(2 cr; S-N only. Prereq—4064, 4065)
Application of basic techniques and methods in blood banking and immunology in the clinical lab. Blood grouping, compatibility testing, and immunologic procedures.

MedT 4088. Applied Diagnostic Microbiology
(2 cr; S-N only. Prereq—4100, 4102)
Isolation, identification, and antimicrobial susceptibility testing of clinically relevant microbes (bacteria, fungi, parasites) from patient specimens.

MedT 4089. Special Rotation
(1 cr; S-N only. Prereq—Completion of MedT preclinical professional courses)
One-week clinical rotation in a specialty lab such as immunohematology, serology, pathological, molecular diagnostics, immunology, or forensics.

MedT 4090. Special Laboratory Methods
(1-2 cr. Prereq—#)
Individual assignment to a special area of experience in the clinical lab.

MedT 4092. Special Laboratory Methods
(1 cr; A-F only. Prereq—#)
Individual assignment to special projects or research in one of the clinical areas of chemistry, hematology, immunohematology, or microbiology.

MedT 4100. Virology, Mycology, and Parasitology for Medical Technologists
(2 cr; A-F only. Prereq—One microbiology course with lab, one biochem course)
Basic aspects of lab diagnosis of viral, fungal, and parasitic infections. Lecture.

MedT 4104. Principles of Diagnostic Microbiology: Lecture
(2 cr; A-F only. Prereq—One microbiology course with lab, one biochem course)

MedT 4105. Principles of Diagnostic Microbiology: Laboratory
(2 cr; A-F only. Prereq—One microbiology course with lab, one biochem course)

MedT 4127W. Introduction to Management and Education I
(1 cr; A-F only. Prereq—#)
Basic concepts in management and education.

MedT 4251. Hematology I: Basic Techniques
(3 cr; A-F only. Prereq—Regis MedT or #)
Theory and application of basic principles and techniques in clinical hematology and hemostasis. Lecture and lab.

MedT 4252. Hematology II: Morphology and Correlation
(2 cr; A-F only. Prereq—4251 or CLS 5251)
Fundamentals of examining blood and bone marrow, emphasizing the microscopic identification of immature and abnormal cells. Clinical correlation of lab findings in hematology and hemostasis. Lecture and lab.

MedT 4253. Hemostasis
(1 cr; A-F only. Prereq—4251 or CLS 5251)
Theory and application of specific concepts and techniques in hemostasis and coagulation. Lecture and lab.

MedT 4263. Comparative Hemostasis
(1 cr; A-F only. Prereq—#)
Theory and application of specific concepts and techniques in hemostasis and coagulation.

MedT 4310. Clinical Chemistry I: Lecture
(2 cr; A-F only. Prereq—One organic chem course with lab, one biochem course, #)
Principles and theory of clinical chemistry to assess renal and metabolic disease/dysfunction, electrolyte balance, and acid-base balance. Introduction to principles and processes for managing test quality in the clinical lab.

MedT 4311. Clinical Chemistry I: Laboratory
(2 cr; A-F only. Prereq—One organic chem course with lab, one biochem course, #)
Principles and theory of clinical chemistry and lab techniques in the analysis of urine, plasma, and body fluids. Emphasis on lab tests to evaluate renal function, electrolytes, and acid-base balance. Principles and processes for managing test quality in the clinical lab.

MedT 4320. Clinical Chemistry II: Lecture
(2 cr; A-F only. Prereq—One organic chem course with lab, one biochem course, 4310 or CLS 5310, #)
Principles and theory of clinical chemistry to assess metabolic disease/dysfunction involving hormones, enzymes, lipids/lipoproteins, cardiac function, liver and digestive tracts. Emphasis on measurement methods and physiological significance.

MedT 4321. Clinical Chemistry II: Laboratory
(2 cr; A-F only. Prereq—One organic chem course with lab, one biochem course, 4310 or CLS 5310, #)
Application of clinical chemistry principles and lab techniques in the analysis of serum, plasma, and urine. Focus on tests to evaluate selected disorders. Development of lab skills and instrumentation use with emphasis on quality control and technique.
MedC 5185. Principles of Biomolecular Simulation. (3 cr. Prereq.–Chem 3520 or #) Molecular simulation for students in medicinal chemistry, pharmaceutics, biochemistry, and chemical physics.


MedC 5202. Research and Development Process of Pharmaceutical Products. (2 cr; S-N only) New drug development process in the U.S. pharmaceutical industry.

MedC 5245. Introduction to Drug Design. (3 cr; A-F only; Prereq.–Chem) Concepts that govern design/discovery of drugs. Physical, bioorganic, medicinal chemical principles applied to explain rational design, mechanism of action drugs.

MedC 5494. Advanced Methods in Quantitative Drug Analysis. (3 cr; A-F only; Prereq.–Chem) Quantitative methods (HPLC, GC, TLC, and immunoassays) for analysis of drugs and metabolites in biological fluids. Advanced techniques such as capillary electrophoresis, supercritical fluid chromatography, GC-MS, LC-MS, and tandem mass spectrometry. Chromatographic theory and statistical approaches to method validation.

MedC 5495. Vistas in Medicinal Chemistry Research. (1 cr; S-N only) Selected topics of contemporary interest in medicinal chemistry.

MedC 5600. General Principles of Medicinal Chemistry. (3 cr; A-F only; Prereq.–MedC grad student or #) Fundamental principles of drug receptors as therapeutic targets, drug-receptor interactions, enzyme inhibitors, drug metabolism and disposition.

Medial Studies (MeSt) Center for Medieval Studies College of Liberal Arts

MeSt 1001. The Middle Ages: An Introduction to Medieval Studies. (3 cr) An introduction to the history, culture, literature, and architecture of the Middle Ages and to interdisciplinary methods of study.

MeSt 3610. Topics in Medieval Studies. (3-4 cr (max 24 cr) Fall of Rome through end of the Middle Ages (ca. 300-1500 A.D.). Current topics specified in Class Schedule.

MeSt 4610. Intermediate Topics in Medieval Studies. (3-4 cr (max 24 cr) Current topics, between the fall of the Roman Empire and the end of the Middle Ages (ca. 300-1500 A.D.), specified in Class Schedule.

MeSt 5610. Advanced Topics in Medieval Studies. (3-4 cr (max 15 cr) Prereq.–One yr work in some area of Middle Ages, reading knowledge of appropriate language) From late antiquity through end of Middle Ages (circa 300-1500 A.D.). Current topics specified in Class Schedule.

MeSt 5993. Directed Studies in Medieval Studies. (3 cr (max 6 cr) Prereq.–One yr work in appropriate language, #) Directed study with one of the core faculty of medieval studies program.

Microbial Engineering (MicE)

BioTechnology Institute College of Biological Sciences

MicE 5309. Biocatalysis and Biodegradation. (3 cr. Prereq.–Chem through organic chem, microbial or adv chem, knowledge of word proc, e-mail, WWW access; access to college-level sci library recommended) Assessing validity of information on biocatalysis and biodegradation; fundamentals of microbial catabolic metabolism as it pertains to biodegradation of environmental pollutants; biocatalysis for specialty chemical synthesis; display of this information on the World Wide Web.

MicE 5355. Advanced Fermentation and Biocatalysis Laboratory. (3 cr; A-F only. Prereq.–Biol 3301 or MicB 3301) Grad student in microbial engineering or upper-div major in [microbiology or chem engineering or biochemistry], # Methods in industrial microbiology, laboratory, and pilot scale fermentation/biocatalysis engineering. Laboratory experiments carried out in fermentation pilot plant. Operation of bench scale and pilot scale bioreactors, designing bioreactors, process optimization, process monitoring/control, scale-up experiments, experimental design, data analysis.

Microbiology (MicB)

Department of Microbiology Medical School

MicB 2022. General Microbiology. (2 cr; VPB 2022. Prereq.–Biol 1002 or 1009) Intended primarily for non-microbiology majors. Fundamental principles of microbiology: bacterial metabolism, growth and genetics; biology of viruses and fungi; control of microorganisms; host-microbe interactions; microorganisms and disease; applied microbiology.


MicB 4001. Microorganisms and Disease. (2 cr. Prereq.–4 cr Biol sci, 7 cr chem or #; not open to microbiology majors; does not count toward 11 upper div cr in biology major) Pathogenic microorganisms, host-parasite interactions, disease treatment and prevention.


MicB 4121. Microbial Ecology and Applied Microbiology. (3 cr; A-F only; 5201 4121, Prereq.–Biol/MicB 3301) Evolution and structure of microbial communities; population interaction within ecosystems; quantitative and habitat ecology; biogeochemical cycling; molecular microbial ecology; gene transfer in the environment; molecular phylogeny of microorganisms. Application of microbes in agriculture; production of commodity chemicals, drugs, and other high-value products.

MicB 4131. Immunology. (3 cr. Prereq.–MicB/VPB 2022 or Biol/MicB/VPB 2032 or Biol/MicB 3301; Biol/Bioc 3021 or Biol 4331) Molecular, genetic, and cellular bases for humoral and cell-mediated immunity; innate vs. adaptive immunity; antigen recognition by B and T lymphocytes; interactions between lymphocytes and other cells of the immune system; cytokines; immunoregulation; key aspects of clinical immunology.

MicB 4141W. Biology, Genetics and Pathogenesis of Viruses. (3 cr. Prereq.–Biol 4003, Biol 4004 or Biol/MicB 3301) Structure, composition and properties of bacterial, plant and animal viruses; interaction with cells; effects on host cell metabolism; molecular biology of virus replication and gene expression; techniques for studying virus properties; viral pathogenesis and tumorigenesis.

MicB 4151. Molecular and Genetic Bases for Microbial Diseases. (3 cr. Prereq.–[3001 or equiv] and [4131 or 4132, Biol 3301 or Biol 3021 or Biol 4331; Biol 4003 or GCB 3022] recommended) Genetic basis of microbial pathogenesis. Effect of gene transfer/secretion on evolution of microbial pathogens and on their capacity to colonize, induce disease. Biochemical/cellular interactions between bacteria and their human hosts.

MicB 4215. Advanced Laboratory: Microbial Physiology and Diversity. (3 cr; A-F only. Prereq.–4111 or 4411) Isolation/cultivation of wide variety of bacteria. Physiological experiments illustrate characteristic features of microorganisms.

MicB 4235. Advanced Laboratory: Virology, Immunology and Microbial Genetics. (3 cr. Prereq.–Biol/Bioc 3021 or equiv, Biol/MicB 3301, two of the following MicB 4111, 4141, 4151) Techniques and experimental methods in microbial genetics, immunology and virology used to study microbes and their interactions with a host.

MicB 4793W. Directed Studies: Writing Intensive. (1-3 cr (max 7 cr); S-N only. Prereq.–4, A no more than 7 cr of [4793, 4794, 4993, 4994] may count toward major requirements) Individual study on selected topics or problems. Emphasizes readings, use of scientific literature.

MicB 4794W. Directed Research: Writing Intensive. (1-3 cr (max 7 cr); S-N only. Prereq.–A no more than 7 cr of [4793, 4794, 4993, 4994] may count toward major requirements) Laboratory or field investigation of selected areas of research.

MicB 4993. Directed Studies. (1-7 cr (max 7 cr); S-N only. Prereq.–Cr ar, Biol/MicB 3301, A, no more than 7 cr of [4793, 4993, 4994, 4994] may count toward major requirements) Individual study on selected topics or problems with emphasis on selected readings and scientific literature.
Middle Eastern Languages and Cultures (MELC)

Institute of Linguistics, ESL, and Slavic Languages and Literatures

College of Liberal Arts

MELC 1904. Freshman Seminar. (3 cr.; A-F only)
Topics vary. See Class Schedule.

MELC 2000. Classical Islamic Civilization. (3 cr.; §Arab 3401, §Hist 3401)
Islamic legacy in the classical age (800-1400) in medical and natural sciences, mathematics, philosophy, literature, and transmission to Europe.

MELC 3505. Survey of the Middle East. (3 cr.; §Arab 3505, §Hist 3505)
Peoples, lands, and cultures of the Middle East. Historical survey from earliest civilizations to the present.

MELC 3511. Ancient Iran. (3 cr.; §CAS 3511)
The development of ancient Iranian culture under the Achaemenid and Sassanian dynasties. Impact of the Zoroastrian religion on Iranians and of Hellenism on the east, especially on such domains as Bactria, Iran's contribution to the flourishing of the cultures of the Silk Road, the thread that connected distant China and Europe.

MELC 3512. Modern Iran. (3 cr.; §CAS 3512)
Development of medieval Iranian culture under the Arab, Turkish, and Mongol rules. Study two major trends: Islamization beginning after the Arab conquest until A.D. 1500; westernization from the Safavids to the Islamic Republic in 1979.

MELC 3526. Islam and Communism. (3 cr.; §CAS 3526)
Development of medieval Islamic culture in Transoxiana; formation of Sufi orders; rise and development of Communist ideology; introduction of socialist principles into Central Asia; clash of Islamic principles with Communist dicta; Pan-Islamism; Pan-Turkism.

MELC 3531. Central Asian Culture. (3 cr.; §CAS 3511)
Development of Central Asian cultures from the rise of the Turkish dynasties (6th c.) to the present. Indo-European indigenous population displaced by the Arabs, Turks, Mongols, and the Soviets. Major themes: Islamization; Turkification; Westernization; and Sovietization.

MELC 3532. Russia and Central Asia. (3 cr.; §CAS 3532)
Rise and fall of the Mongol Empire, formation of the Chaghatay Khateate and the Golden Horde. Russian expansion into Central Asia and rivalry with Britain. Russia and the Central Asian republics during and after the Soviet period.

MELC 3541. Islam in the Catholic Age: Arab Phase. 600 A.D. to 800 A.D. (3 cr.; §Arab 3541, §Hist 3541)
The rise of Islam in its Arabian setting. Roles of the prophet, the Orthodox and Umayyad Caliphs. Development of Islamic state and empire. Status of Muslims and non-Muslims.

MELC 3542. Medieval Islam. (3 cr.; §Arab 3542, §Hist 3542)
Islamic dynasties, Mamluks and Mongols, Crusaders and Assassins. Abbasid Caliphate's disintegration and rise of Seljuk Turks.

MELC 3543. Arabs under Mamluks and Ottomans: 1300-1920. (3 cr.; §Arab 3543, §Hist 3543)
Arabs under Mamluk rule. Struggle against Crusaders and Mongols. Disintegration and reemergence under Muhammad Ali of Egypt, dynastic struggles in Syria, rise of Young Turks and Arab revolt.

MELC 3544. Arab World 1920 Until the Present. (3 cr.; §Arab 3544, §Hist 3544)
Struggle in the Arab world for independence and its course since independence. Emphasis on development, political instability and unity, political structures, and the Arab-Israeli conflict.

MELC 3601. Fiction of Iran and Central Asia. (3 cr.; §CAS 3601)
Social, political, and religious thought of Iranian and (Soviet) Central Asian writers of fiction since the early years of the 20th century; emphasizes themes of tradition, modernization (Westernization and Sovietization), women's rights, and secularization.

MELC 3602. Persian Poetry. (3 cr.; §CAS 3602)
Major poetic works of Iran in translation dealing with life at the medieval courts, Sufi poetry, and "new" poetry. Rudaki, Khayyam, Rumi, Hafiz, Yushij, and Farrukhzad are among the poets whose works are examined.

MELC 3603. Topics in Middle Eastern Languages and Cultures. (1-4 cr.; max 16 cr.; A-F only)
Topics vary. See Class Schedule or contact department for details.

MELC 3993. Directed Studies. (1-10 cr.; max 10 cr.)
Prereq.-A, Q
Guided individual study.

MELC 3994. Directed Research. (1-10 cr.; Prereq.-A, Q)
Prereq.-Background in Iranian, Central Asian, or Islamic studies recommended
Study and discussion of the intellectual life of the region from the rise of the Ghaznavids (A.D. 1000) to the fall of the Timurids (A.D. 1500). Ibn Sina (Avicenna), al-Biruni, al-Ghazali, Rumi, Sā’di, and Firdowsi are among the sages whose lives are examined.

MELC 5526. Islam and Communism. (3 cr.; §CAS 5526)
Development of medieval Islamic culture in Transoxiana; formation of Sufi orders; rise and development of Communist ideology; introduction of socialist principles into Central Asia; clash of Islamic principles with Communist dicta; Pan-Islamism; Pan-Turkism.

MELC 5532. Russia and Central Asia. (3 cr.; §CAS 5532)
Rise and fall of the Mongol Empire, formation of the Chaghatay Khateate and the Golden Horde. Russian expansion into Central Asia and rivalry with Britain. Russia and the Central Asian republics during and after the Soviet period.

MELC 5601. Fiction of Iran and Central Asia. (3 cr.; §CAS 5601)
Social, political, and religious thought of Iranian and (Soviet) Central Asian writers of fiction since the early years of the 20th century; emphasizing themes of tradition, modernization (Westernization and Sovietization), women's rights, and secularization.

MELC 5602. Persian Poetry. (3 cr.; §CAS 5602)
Major poetic works of Iran dealing with life at the medieval courts, Sufic poetry, and "new" poetry. Studied. Rudaki, Khayyam, Rumi, Hafiz, Yushij, and Farrukhzad are among the poets whose works are examined.

Library Resources

For definitions of course numbers, symbols, and abbreviations, see page 296.
Mil 1004. Military Science II Leadership Lab. (1 cr. Prereq–Enrollment in 1221) Learn and apply ethics-based leadership skills. Build self-confidence through individual and team building concepts. Gain insight into the advance course in order to make an informed decision on whether to apply. Further develop your leadership style through practical application scenarios.

Mil 1005. Military Science III Leadership Lab. (1 cr. Prereq–Enrollment in 3130) Involves leadership responsibilities for the planning, coordination, execution, and evaluation of various training and activities with Basic Course students and for the ROTC program. Students develop, practice, and refine leadership skills by serving and being evaluated in a variety of responsible positions.

Mil 1006. Military Science III Leadership Lab. (1 cr. Prereq–Enrollment in 3131) Involves leadership responsibilities for the planning, coordination, execution, and evaluation of various training and activities with Basic Course students and for the ROTC program. Students develop, practice, and refine leadership skills by serving and being evaluated in a variety of responsible positions.

Mil 1007. Military Science IV Leadership Lab. (1 cr. Prereq–Enrollment in 3140) Involves leadership responsibilities for the planning, coordination, execution, and evaluation of various training and activities with Basic Course students and for the ROTC program. Students develop, practice, and refine leadership skills by serving and being evaluated in a variety of responsible positions.

Mil 1008. Military Science IV Leadership Lab. (1 cr. Prereq–Enrollment in 3141) Involves leadership responsibilities for the planning, coordination, execution, and evaluation of various training and activities with Basic Course students and for the ROTC program. Students develop, practice, and refine leadership skills by serving and being evaluated in a variety of responsible positions.

Mil 1010. Introduction to ROTC. (1 cr. Prereq–Enrollment in 1001) Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations, and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor lab environments.

Mil 1011. Introduction to Leadership. (1 cr. Prereq–Enrollment in 1002) Learn and apply principles of effective leadership. Reinforce self-confidence through participation in physically and mentally challenging exercises. Relate organizational ethical values to the effectiveness of a leader. Participation in a weekend exercise is optional, but highly encouraged.

Mil 1220. Self/Team Development. (2 cr; A-F only. Prereq–Enrollment in Basic Course) Learn and apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams. Develop skills in oral presentations, writing concise, planning of events, coordination of group efforts, advanced first aid, land navigation, and basic military tactics. Fundamentals of ROTC’s Leadership Development program.

Mil 1221. Individual/Team Military Tactics. (2 cr; A-F only. Prereq–Enrollment in Basic Course) Individual and team aspects of military tactics in small unit operations. Use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper division ROTC students.

Mil 3130. Leading Small Organizations I. (3 cr. Prereq–Enrollment in Advanced Course) Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training.

Mil 3131. Leading Small Organizations II. (3 cr. Prereq–Enrollment in Advanced Course) Continues methodology of 3130. Analyze tasks; prepare written or oral guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress.

Mil 3140. Leadership Challenges and Goal Setting. (3 cr. Prereq–Enrollment in Advanced Course) Plan, conduct, and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action to attain them. Assess organization cohesion and develop strategies to improve it. Develop confidence in skills to lead people and manage resources. Learn/apply various Army policies and programs.

Mil 3141. Transition to Lieutenant. (3 cr. Prereq–Enrollment in Advanced Course) Continues the methodology from 3140. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as they relate to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant.

Mil 3970. Directed Studies. (3 cr; Prereq–A)
Course Descriptions

Mort 3161. Embalming Laboratory. (1 cr; S-N only. Prereq–Mortuary science major) Practices/procedures of embalming in a preparation room setting using human cadavers.

Mort 3370. Funeral Service Seminar. (1 cr; S-N only. Prereq–Mortuary science major) Selected presentations related to topics and issues in funeral service.

Mort 3379. Clinical Funeral Service Rotation. (2 cr (max 10 cr); S-N only. Prereq–Mortuary science major) matriculated into prog) Practical experience working in clinical settings related to funeral service. Rotation sites include licensed funeral homes, licensed crematories, licensed cemeteries, and affiliate institutions such as hospices, hospitals, morgues, and coroner/medical examiners offices.

Mort 3380. Funeral Service Practicum. (8 cr; S-N only. Prereq–Mortuary science major who has completed all other coursework) Practical experience during one academic term in a funeral home as assigned by the program.

Museum Studies (MSt)

Graduate School

MST 5011. Museum History and Philosophy. (3 cr; A-F only. Prereq–4) Historical and philosophical roots of museum development in Europe and North America from the Renaissance to modern day museums and history centers. Emerging philosophical issues faced by museums today.

MST 5012. Museum Practices. (3 cr; A-F only. Prereq–5011 or #) Practical aspects of museum work. Standards, practices, responsibilities, and issues, all set in greater museum context. Curatorial and educational duties, collections management, security, funding, boards, public relations, installation, and budgeting.

MST 5020. Internship. (1-4 cr (max 32 cr); S-N only. Prereq–5011, 5012). Students arrange to perform a professional-level task in a museum of good standing under close supervision of a member of the museum’s professional staff. Instructor must approve a work plan and report.

Music (Mus)

School of Music

College of Liberal Arts

Mus 0901. Junior Recital. (0 cr; A-F only. Prereq–Music major, concurrent registration in applied music, A, A) Preparation for junior recital. Student will be supervised by major applied instructor.

Mus 0951. Senior Recital. (0 cr; A-F only. Prereq–Music major, concurrent registration in applied music, A, A) Preparation for senior recital. Student will be supervised by major applied instructor.


Mus 1051. Class Piano for Nonmusic Majors I. (2 cr) For nonmusic majors with little or no keyboard background. Functional skills such as reading, harmonizing, playing by ear and improvising, along with basic technique and study of elementary solo and ensemble repertoire.

Mus 1052. Class Piano for Non Music Majors II. (2 cr (max 2 cr)) For nonmusic majors with little or no keyboard background. Functional skills such as reading, harmonizing, playing by ear and improvising, along with basic technique and study of elementary solo and ensemble repertoire.

Mus 1151. Piano: Class Lessons I. (2 cr; A-F only. Prereq–Fr music major with limited keyboard background) Functional skills such as reading, transposing, harmonizing, improvising, and playing by ear. Keyboard theory, technique, and repertoire.

Mus 1152. Piano: Class Lessons II. (2 cr; A-F only. Prereq–Fr music major with limited keyboard background) Functional skills such as reading, transposing, harmonizing, improvising, and playing by ear. Keyboard theory, technique, and repertoire.

Mus 1155. Keyboard Skills I. (2 cr; A-F only. Prereq–[Keyboard major or music major with extensive keyboard background], A) Reading, transposing, harmonizing, improvising, and playing by ear. Keyboard theory, technique, and repertoire.

Mus 1156. Keyboard Skills II. (2 cr; A-F only. Prereq–[Keyboard major or music major with extensive keyboard background], A) Reading, transposing, harmonizing, improvising, and playing by ear. Keyboard theory, technique, and repertoire.

Mus 1260. Voice Class. (2 cr (max 4 cr; Prereq–Basic musicianship for learning and performing simple songs) The fundamentals of speech and singing including information about the vocal instrument, the vocal process, vocal technique, and how to learn and perform three simple songs.

Mus 1471. Guitar: Class Lessons I. (2 cr; A-F only) Fundamentals for the beginning guitarist; progressive development of skills. Basic strumming techniques, harmonizations in basic keys. Students must furnish acoustic guitar.

Mus 1472. Guitar: Class Lessons II. (2 cr; A-F only. Prereq–1471 or #) Fundamentals for the beginning guitarist; progressive development of skills. Advanced strumming techniques, bass runs, finger-picking strums. Students must furnish acoustic guitar.

Mus 1501. Foundations of Musical Theory: Analysis and Ear-Training I. (3 cr; A-F only. Prereq–[Music major or #, permission number]) Basics of common-practice tonal harmony, part-writing, music analysis in various contexts, ear-training/sight singing.

Mus 1502. Foundations of Musical Theory, Analysis, and Ear-Training II. (3 cr; A-F only. Prereq–[1501 or diagnostic test administered by School of Music], permission number) Basics of common-practice tonal harmony/part-writing, music analysis in various contexts, ear-training, sight singing.

Mus 1801W. Music, Society, and Cultures. (3 cr; A-F only. Prereq–[Music major or #, permission number]) Study rural, urban, tribal musics throughout world with interdisciplinary methods of humanities/social sciences. World-wide distribution of musical creativity with audio/video documentation.


Mus 1902. Topics: Freshman Seminar. (3 cr; A-F only. Prereq–Fr or no more than 36 cr) Topics specified in Class Schedule.

Mus 1905. Topics: Freshman Seminar. (3 cr; A-F only. Prereq–Fr or max 36 cr) Topics specified in Class Schedule.

Mus 1907W. Topics: Freshman Seminar. (3 cr; A-F only. Prereq–Fr or no more than 36 cr) Topics specified in Class Schedule.

Mus 1910W. Topics: Freshman Seminar. (3 cr; A-F only. Prereq–Fr or no more than 36 cr) Topics specified in Class Schedule.

Mus 3001W. Foundations of Musical Thought. (4 cr; A-F only) Develop a range of strategies for listening to music and for thinking about music in an informed way. Wide range of musical styles including classical, ethnic, and jazz.

Mus 3021. Introduction to Music. (3 cr) Survey of European and American “art” and “popular” music in the context of those cultures; aural analyses of musical styles and forms.

Mus 3027. Lyric Song in Medieval Culture. (3 cr; A-F only) Introduction to recent music. Composers of the American musical avant-garde, ca. 1950-1970, including John Cage and Pauline Oliveros, in their sonic/social contexts. Non-Western culture’s recent effect on music. Reading, listening, journal writing, original composition, performance.

Mus 3150. Accompanying Skills. (1 cr (max 8 cr); A-F only. Prereq–Fr or sr piano or organ major or #) A practical introduction to every facet of the art of piano as an accompaniment and collaborative instrument.

Mus 3230. Chorus. (1 cr (max 8 cr; Prereq–Choral and/or instrumental music background; audition, #) Includes the University Women’s Chorus, Men’s Chorus, Concert Choir, and Choral Union. Choirs participate in a variety of programs exploring both Western and non-Western repertoire from the Middle Ages through the 20th century. Concerts include touring, and collaborative campus and community performances.

Mus 3241. Vocal Literature I: German Lieder. (1 cr; A-F only. Prereq–Vocal performance or accompanying major, 2 yrs music theory and music history) An exploration of the German Lied, its origins, composers, and development. Musical and textual analysis of representative works, examination of the poetry which serves as song text, and brief survey of poets in the German Romantic period. Extensive listening assignments.

Mus 3242. Vocal Literature II: French Melodie. (1 cr; A-F only. Prereq–Vocal music or accompanying major; 2 yrs of music theory and music history) The French Mélodie, its origins, composers, and development. Musical and textual analysis of representative works, examination of the poetry which serves as song text, and brief survey of the French Symbolist poets. Extensive listening assignments.
Mus 3261. Italian Diction for Singers. (1 cr; A-F only. Prereq—Voice or choral music major; concurrent reg in applied voice) The sounds and symbols of the International Phonetic Alphabet, rules for correct Italian lyric diction, rudimentary Italian grammar, the meanings of Italian musical expressive markings, and Italian words most commonly found in song texts.

Mus 3262. English Diction for Singers. (1 cr; A-F only. Prereq—Voice or choral music major, concurrent reg in applied voice) English lyric diction for performance of classical vocal music. Use International Phonetic Alphabet for standard transcriptions of song texts, compile a discography of British/American art songs, perform songs in class, and prepare poetry for oral presentation and improvisation.

Mus 3263. German Diction for Singers. (1 cr; A-F only. Prereq—Voice or choral music major; concurrent reg in applied voice) Principles and practice of German lyric diction for classical vocal music. Transcriptions of German Lieder into International Phonetic Alphabet, elementary German grammar and common song vocabulary, 4 to 5 German songs performed in class for critique, and rules for pronunciation.

Mus 3264. French Diction for Singers. (1 cr; A-F only. Prereq—Voice or choral music major; concurrent reg in applied voice) Principles and practice of French lyric diction for classical vocal music. Transcriptions of French mélodie into International Phonetic Alphabet, elementary French grammar and common song vocabulary, 4 to 5 French songs performed in class for critique, and rules for pronunciation.

Mus 3331. Jazz Improvisation I. (2 cr; A-F only. Prereq—Music major or #) Rudiments; analysis; improvisation on blues in three major keys and American popular jazz compositions from swing era to early bebop; applications of major and minor scales; ear training.

Mus 3332. Jazz Improvisation II. (2 cr; A-F only. Prereq—#) Transposition; analysis; improvisation on blues in three major keys and standard American popular jazz compositions from swing era to early bebop; II-V-I progressions; ear training.

Mus 3340. Jazz Ensemble. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) A 20-member performing organization covering significant jazz compositions and arrangements written specifically for this medium.

Mus 3350. Jazz Combo. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) A 20-member performing organization covering significant jazz compositions and arrangements written specifically for this medium.

Mus 3410. University Wind Bands. (1 cr [max 14 cr]; A-F only. Prereq—Audition, #) Wind ensemble and symphony bands perform standard and contemporary literature; concerts and tour appearances. Players from all colleges may participate.

Mus 3420. Orchestra. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Symphony orchestra and/or wind bands perform standard repertory and major works with chorus; concerts and tour appearances. Players from all colleges may participate.

Mus 3430. Campus Orchestra. (1 cr [max 8 cr]. Prereq—Audition, #) An orchestra for players who are not music majors and/or are unable to register for University Orchestra. Standard chamber orchestra and string orchestra literature rehearsed and performed.

Mus 3440. Chamber Ensemble. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Performance of chamber music; duos, trios, quartets, quintets, and other ensemble combinations for instruments and voices.

Mus 3480. Marching Band. (1 cr [max 4 cr]; A-F only. Prereq—#) A 250-member performing organization open to players from all colleges. Performs at University football games and other athletic functions.


Mus 3511. Ear-Training and Sight-Singing IV. (1 cr; A-F only. Prereq—3501 or 3518 or appropriate score on Ear-Training Placement Exam) Melodic, harmonic, and rhythmic dictation; sight-singing; chief reading. Emphasis on chromatic harmony.


Mus 3551. Composition Class. (2 cr; A-F only. Prereq—3532, #) Introduction to 20th century techniques, styles and methodologies of composition. Five principal compositions to be written, plus additional smaller pieces in various forms and combinations. Directed listening and analysis, with emphasis on control of basic craft elements while creating original approaches to musical creation.

Mus 3601W. History of Western Music I. (3 cr; A-F only. Prereq—[[1151 or 1155], 1501, music major] or #) History of European art-music tradition, its social contexts from antiquity to 1700: composers, styles, structures, social institutions.

Mus 3602W. History of Western Music II. (3 cr; A-F only. Prereq—[[1502, music major] or #) History of European art-music tradition, its social contexts from 1700 to 1850: composers, styles, structures, social institutions.

Mus 3603W. History of Western Music III. (3 cr; A-F only. Prereq—[1503, music major] or #) History of European/American art, popular music traditions from 1850 to present: composers, styles, structures, social institutions.

Mus 3950. Topics in Music. (1-3 cr [max 15 cr]) Each offering focuses on a single topic. Topics specified in Class Schedule.

Mus 3993. Directed Studies. (1-4 cr [max 10 cr]; A-F only. Prereq—#; Guided individual reading or study.

Mus 3995. Major Project. (1 cr; A-F only. Prereq—Undergrad music major in B.A. program, #) Required of music majors in senior year of the B.A. program. Research paper on topic of student’s choice in consultation with faculty mentor. Sign up in Undergraduate Studies office one term in advance.

Mus 5101. Piano Pedagogy I. (2 cr; A-F only. Prereq—8 cr in MusA 1301 or MusA 1401 or #) Demonstration and discussion of teaching techniques, methods, and materials for group and individual instruction at the elementary, intermediate, and late intermediate levels.

Mus 5102. Piano Pedagogy II. (2 cr; A-F only. Prereq—5101 or grad piano major or #) Demonstration and discussion of teaching techniques, methods, and materials for group and individual instruction at the elementary, intermediate, and late intermediate levels.

Mus 5111. Advanced Piano Pedagogy I. (2 cr; A-F only. Prereq—5101 or grad piano major or #) Demonstration and discussion of teaching techniques, methods, and materials for group and individual instruction at the intermediate and early advanced levels.

Mus 5112. Advanced Piano Pedagogy II. (2 cr; A-F only. Prereq—5101 or grad piano major or #) Demonstration and discussion of teaching techniques, methods, and materials for group and individual instruction at the intermediate and early advanced levels.

Mus 5120. Piano Pedagogy Practicum. (1 cr [max 4 cr]; A-F only. Prereq—5101-5102 or 5111-5112 or #) Supervised teaching of a piano pupil or group of pupils for one semester (minimum 12 weeks for each half-hour per week). Supervising instructor will assist with selection of materials, periodic consultation, and observation (live or video taped) of selected lessons.

Mus 5131. Advanced Keyboard Skills I. (2 cr; A-F only. Prereq—3502, or grad) Diatonic and chromatic harmony at the piano. Realization of figured basses of the 17th and 18th centuries. Performance of choral, orchestral, and chamber music of the 17th to 20th centuries, from open score using all clefs.

Mus 5132. Advanced Keyboard Skills II. (2 cr; A-F only. Prereq—3502, or grad) Diatonic and chromatic harmony at the piano. Realization of figured basses of the 17th and 18th centuries. Performance of choral, orchestral, and chamber music of the 17th to 20th centuries, from open score using all clefs.

Mus 5141. Piano Literature. (2 cr; A-F only. Prereq—12 cr of MusA 1301 or MusA 1401 or #) Introductory survey of representative keyboard literature of the Baroque to the mid-20th century. Study of typical forms, style features, technical issues, and performance practice for each period.

Mus 5150. Body Awareness in Activity: The Alexander Technique for Musicians. (2 cr [max 4 cr]) Alexander technique with specific applications to music performance. Emphasis on body/mind awareness to promote technical ease and freedom.

Mus 5151. Organ Literature I. (1 cr; A-F only. Prereq—3502, 3603, or grad or #) Organ literature from the 14th century to the mid-18th century. Influence of organ design of various periods and national schools on the literature and its performance.
Mus 5152. Organ Literature II. (3 cr; A-F only. Prereq—3502, 3603, sr or grad or #) Organ literature of J. S. Bach and of other 19th- and 20th-century composers. Influence of organ design of various periods and national schools on the literature and its performance.

Mus 5160. Instrumental Accompanying Skills and Repertoire. (2 cr [max 4 cr]; A-F only. Prereq—Accomp major.)

Performance class in accompanying skills particular to orchestral reductions and non-sonata instrumental accompanying. Repertoire to include, but not be limited to, classical and romantic string concerti, and “encore” pieces.

Mus 5170. Vocal Accompanying Skills and Repertoire. (2 cr [max 4 cr]; A-F only. Prereq—French, German and Italian diction, accomp or grad vocal major.)

Performance class (Lieder, melodie, opera) with emphasis on coaching techniques and performance skills of pianists and singers.

Mus 5181. Advanced Piano Literature I. (2 cr; A-F only. Prereq—grad piano maj or #) Literature for piano from late Baroque period to mid-20th century.

Mus 5182. Advanced Piano Literature II. (2 cr; A-F only. Prereq—grad piano major or #) Literature for piano from late Baroque period to mid-20th century.

Mus 5230. Chorus. (1 cr [max 8 cr]; A-F only. Prereq—Choral and/ or instrumental music background; audition, #) University Women’s Chorus, Men’s Chorus, Concert Choir and Choral Union. Choruses participate in a variety of programs exploring both Western and non-Western repertoire from the Middle Ages through the 20th century. Concerts include touring, and collaborative campus and community performances.

Mus 5240. Chamber Singers. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Mixed chorus of about 24 voices. Performances each semester of works for small choirs.

Mus 5241. Vocal Literature I. (3 cr; A-F only. Prereq—[12 cr in MusA 1304, grad music student] or #) Vocal literature of major/minor composers from 17th century to present. Structure, style, performance practice.

Mus 5242. Vocal Literature II. (3 cr; A-F only. Prereq—12 cr in MusA 1104 or MusA 1304, grad music major or #) Vocal literature of major and minor composers from 17th century to present; structure, style, and performance practice.

Mus 5250. Opera Workshop and Ensemble. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Preparation and performance of operatic arias, choruses, and scenes. Participation in fully staged or workshop productions of music theatre repertoire.

Mus 5260. Stage Movement and Acting for Singers. (1 cr [max 4 cr]; A-F only. Prereq—Audition, #) Basic techniques of stage movement and acting styles, application of various forms of music theatre.

Mus 5270. Voice Practicum. (1 cr [max 2 cr], A-F only. Prereq—Undergrad sr vocal major or #) Teaching voice class or individual students with peer and faculty feedback. Assist in class voice instruction or teach two students weekly in conjunction with two one-hour observation labs. May be taken for two semesters.

Mus 5271. Diction for Singers I. (2 cr; A-F only. Prereq—[12 cr of MusA 1304 or grad music major or #] Principles and techniques of singing in English, Italian, Spanish, German, and French. International Phonetic Association alphabet used.

Mus 5272. Diction for Singers II. (2 cr; A-F only. Prereq—[12 cr MusA 1304 or grad music major or #] Principles and techniques of singing in English, Italian, Spanish, German, and French. International Phonetic Association alphabet used.

Mus 5275. Vocal Pedagogy I. (3 cr; A-F only. Prereq—Sr vocal major or #) Advanced study of mind/body preparations for singing, anatomy, and physiology of the vocal mechanism. Voice use and care, historical and comparative pedagogy, learning theories, models and guidelines for teaching, instructional techniques, and diagnosing and solving vocal problems.

Mus 5276. Vocal Pedagogy II. (2 cr; A-F only. Prereq—Sr vocal major or #) History of solo vocal performance; selection and preparation of beginning level solo vocal repertoire; development of vocal performance skills (interpretation, expression, artistry), recital programming, and vocal career counseling.

Mus 5277. Vocal Workshop. (1 cr; A-F only. Prereq—Music major or #) Short term vocal workshops address specific topics including repertoire, vocal technique, and vocal performance. One workshop focuses on class voice instruction.

Mus 5279. Group Voice: Performance/Pedagogy. (2 cr; A-F only. Prereq—Performance only track: 2 cr per sem; Performance Pedagogy track: 3 cr per sem; upper div. only) Foundations/standards of speech/singing. Vocal production, anatomy, physiology, terminology. Application of vocal techniques in learning/performing repertoire. Teaching methods, including voice/motion exercises.


Mus 5283. Choral Conducting Technique. (1 cr; A-F only. Prereq—Audition, #) Choral conducting, rehearsal techniques, interpretation of music.

Mus 5284. Choral Conducting I: Gregorian Chant Through Baroque Era. (3 cr; A-F only. Prereq—Audition, #) Techniques and rehearsal procedures. Focus on music before 1750 including works by Lassus, Schütz, Bach, and Handel.

Mus 5285. Choral Conducting II: Classical Era to the Present. (3 cr; A-F only. Prereq—Audition, #) Techniques and rehearsal procedures. Focus on music after 1750 including works by Mozart, Haydn, Beethoven, Mendelssohn, Brahms, and Stravinsky.

Mus 5300. Jazz Rhythm Section Techniques. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Study and function of instruments in the jazz rhythm section. Basic line and voicing, techniques for piano and guitar, and style patterns for percussion.

Mus 5336. Jazz Arranging. (3 cr; A-F only. Prereq—3502 or #) Beginning techniques of arranging for jazz combo and jazz ensemble; vocal and instrumental.

Mus 5340. Jazz Ensemble. (1 cr [max 6 cr]; A-F only. Prereq—Audition, #) A 20-member performing organization covering jazz and contemporary literature; concerts and tour appearances. Players from all col leges may participate.

Mus 5415. Literature for Band and Wind Ensemble. (2 cr; A-F only) Ensemble literature for winds and percussion; analysis and study of repertoire from classical period to the present.

Mus 5420. Orchestra. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Symphony orchestra performs standard repertory and major works with chorus; concerts and tour appearances. Players from all colleges may participate.

Mus 5421. Suzuki Violin Pedagogy I. (2 cr; A-F only. Prereq—Violin major or #) Philosophy and teaching techniques of Japanese pedagogue Shinichi Suzuki and their applications in Western culture. Discussion, playing experience, and observation of children’s lessons in the MacPhail Center Suzuki Program.

Mus 5422. Suzuki Violin Pedagogy II. (2 cr; A-F only. Prereq—5421 or #) Philosophy and teaching techniques of Japanese pedagogue Shinichi Suzuki and their applications in Western culture. Discussion, playing experience, and observation of children’s lessons in the MacPhail Center Suzuki Program.

Mus 5423. Suzuki Pedagogy Practicum. (1 cr [max 1 cr]; A-F only. Prereq—[[5424 or 5425], grad music student] or #) Supervised teaching of both individual and group lessons. Instructor provides periodic critiques from observation of live or videotaped lessons.

Mus 5424. Advanced Suzuki Violin Pedagogy I. (2 cr; A-F only. Prereq—5422 or #) Intensive examination of Suzuki techniques for intermediate and advanced violin students in Western society. Discussion, playing experience, observation of children’s lessons in the MacPhail Center Suzuki Program, and practical teaching experience.

Mus 5425. Advanced Suzuki Violin Pedagogy II. (2 cr; A-F only. Prereq—5424 or #) Intensive examination of Suzuki techniques for intermediate and advanced violin students in Western society. Discussion, playing experience, observation of children’s lessons in the MacPhail Center Suzuki Program, and practical teaching experience.

Mus 5426. Final Project in Suzuki Pedagogy. (1 cr; A-F only. Prereq—Grad music student in Violin Performance and Suzuki Pedagogy Program) Research project.

Mus 5427. Violin Pedagogy I. (1 cr; A-F only. Prereq—Violin or viola major or #) Private teaching of violin students at beginning, intermediate, and advanced levels. Discussion and demonstrations of pedagogical techniques.

Mus 5428. Violin Pedagogy II. (1 cr; A-F only. Prereq—Violin or viola major or #) Private teaching of violin students at beginning, intermediate, and advanced levels. Discussion and demonstrations of pedagogical techniques.

Mus 5430. Concerto Grosso Ensemble. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Study and performance of string orchestra and small chamber orchestra literature.

Mus 5440. Chamber Ensemble. (1 cr [max 8 cr]; A-F only. Prereq—Audition, #) Performance of chamber music; duos, trios, quartets, quintets, and other ensemble combinations for instruments and/or voices.

Mus 5450. Orchestral Repertoire. (1 cr [max 3 cr]; A-F only. Prereq—Audition, #) Investigation of practical and performance problems in standard orchestral repertoire with regard to style and interpretation.

Mus 5464. Cello Pedagogy. (2 cr; A-F only. Prereq—Audition, #) Concentrated study of cello teaching methods. Provides students with the strategies for teaching cello privately, develops analytical skills, and increases knowledge of cello repertoire. For practical application in conjunction with string technique course.
Mus 5466. Guitar Pedagogy. (2 cr; A-F only. Prereq—Guitar principal or major or M). Historical survey of methods and studies from late 18th century to present, reflecting variety of content and approach. Works by Aguado, Sor, Giuliani, Tarrega, Segovia, Carlevaro, Duncan, Iznaola, Dodgson, and Brindle.

Mus 5470. Woodwind Chamber Ensemble. (1 cr (max 8 cr) Prereq—Mus 5490 or See Audition). Chamber music performance using homogeneous or mixed combinations of woodwind instruments.

Mus 5471. Woodwind Literature and Pedagogy I. (3 cr; A-F only. Prereq—Music major or M). A study of the major teaching materials for the five woodwind instruments including methods, duets, and solos used primarily for pedagogical reasons.

Mus 5472. Woodwind Literature and Pedagogy II. (3 cr; A-F only. Prereq—Music major or M). A study of chamber music involving one or more woodwind instruments. May include additional instruments such as piano, strings, and/or voice.

Mus 5473. History and Acoustics of Single Reed Instruments. (2 cr; A-F only. Prereq—Music major or M). Study of clarinet and saxophone history and literature, mechanical design and development, acoustics, and techniques of performance, selected teaching and performance techniques.

Mus 5480. University Brass Choir. (1 cr (max 8 cr). Prereq—Audition, M). The University Brass Choir is an ensemble of 16 brass and percussion players exploring unique literature that spans 400 years. From the rich antiphonal music of Giovanni Gabrieli (1557-1612) to the works of the 20th century. The Brass Choir performs in Twin Cities churches and concert halls.

Mus 5481. Trumpet Pedagogy. (2 cr. Prereq—Sr or grad in music or M). Principles of trumpet pedagogy. Discussion of literature, history, and current teaching aids.

Mus 5485. Transcription for Winds. (2 cr. Prereq—3502 or M). Principles of music manuscript and examination of transcription examples. Transcription projects with score and parts. Smaller projects that involve arrangements and original compositions.


Mus 5491. Percussion Literature I. (2 cr; A-F only. Prereq—Jr or Sr or grad or M). Repertoire derived from orchestral and band literature for snare drum, timpani, mallet instruments, and various percussion accessories. Major works of the 20th century written for solo percussion, percussion ensemble, and chamber groups of percussion and non-percussion instruments.

Mus 5492. Percussion Literature II. (2 cr; A-F only. Prereq—Jr or Sr or grad or M). Repertoire derived from orchestral and band literature for snare drum, timpani, mallet instruments, and various percussion accessories. Major works of the 20th century written for solo percussion, percussion ensemble, and chamber groups of percussion and non-percussion instruments.

Mus 5501. Intensive Theory and Analysis of 20th-Century Music. (4 cr; A-F only. Prereq—3502 or M). Designed for music majors only, the course is comprised of an intensive introduction to the theory and analysis of art music in various styles developed during the 20th century.

Mus 5533. Music Since 1945. (3 cr; A-F only. Prereq—3502 or M). Examine procedures and techniques of music composed since 1945. Integral serialism, sound mass, electronic music, indeterminacy, improvisation, and minimalism in the works of Babbitt, Ligeti, Davidovsky, Oliveros, Cage, Riley, and Reich.

Mus 5541. Counterpoint I. (3 cr; A-F only. Prereq—3501, 3511 or M). Practice writing in polyphonic styles of Renaissance and Baroque; species counterpoint, canonic and fugal, and other imitative procedures. Study representative forms: motets, inventions, fugues, and chorale-based idioms. Analysis of works by Lassus, Palestrina, Victoria, Purcell, Buttstedte, Fischer, and Bach.

Mus 5542. Counterpoint II. (4 cr; A-F only. Prereq—3541). Advanced writing in three and more voice polyphonic styles of Renaissance and Baroque. Analyze works of such composers as Lassus, Palestrina, and Bach; emphasis on canonic and fugal procedures.

Mus 5550. Composition. (2 cr (max 8 cr); A-F only. Prereq—3502 or equiv, 3551 or grad, M). Original works in various forms. Development of individual compositional style in a post-tonal idiom. Exploration of a variety of forms, performing forces, and techniques.

Mus 5561. Orchestration I. (3 cr; A-F only. Prereq—3502). Scoring techniques for ensembles in combination and full orchestra; year-long sequence. Study of representative works from 18th through 20th centuries.

Mus 5562. Orchestration II. (3 cr; A-F only. Prereq—5561). Scoring techniques for ensembles in combination and full orchestra; year-long sequence. Study of representative works from 18th through 20th centuries.

Mus 5571. Schenkerian Analysis for Performers. (3 cr; A-F only. Prereq—3502). Theory/analysis of tonal music using principles developed by Heinrich Schenker. Basic concepts/notation, their application to excerpts/short pieces from 18th/19th centuries.

Mus 5572. Chromaticism in Tonal Music. (3 cr. Prereq—3502). Exploration of chromatic tonal practices through analysis of selected repertoire, completion of written exercises (figured bass, harmonization of melodies, model composition), ear-training, and keyboard exercises.


Mus 5592. Digital Music Synthesis and Processing Techniques. (3 cr; A-F only. Prereq—5591 or M). Study of specific dsp topics such as filtering, formant synthesis, reverberation techniques, and additive synthesis. Work with interactive MIDI applications.

Mus 5597. Music and Text. (3 cr; A-F only. Prereq—3502). Designed for music majors only, this course gives an introduction to the analysis of music with texts such as art song and opera.

Mus 5611. Resources for Music Research. (3 cr; A-F only. Prereq—3603). Development of skills in identifying, locating, and evaluating resources for research in music. Computer-searching techniques, acquaintance with basic reference sources in the field, preparation of the music research paper.

Mus 5613. MusA Course Review for Graduate Students. (3 cr; S–N only. Prereq—Grad music major, assigned by placement exam; cannot be applied toward requirements for any music degree program). History of European art-music tradition and its social contexts from antiquity to 1750. Composers, styles, structures, social institutions.

Mus 5614. Music History Review for Graduate Students II. (3 cr; S–N only. Prereq—Grad music major, assigned by placement exam; cannot be applied toward requirements for any music degree program). History of European art-music tradition and its social contexts from 1750 to present: composers, styles, structures, social institutions.

Mus 5620. Topics in Opera History. (3 cr (max 6 cr); A-F only. Prereq—Grad music major or M). Through the study of specific operas, students will examine the ways in which intersections of geography, politics, and musical style influenced and perpetuated operatic production within specific geographical and chronological boundaries. Periods/ countries will vary each semester.

Mus 5644. Music in 20th-Century American Culture. (3 cr; A-F only. Prereq—3603, 5501 or M). Stylistic and cultural bases of cultivated and vernacular traditions and their intersections. Topics include folk and ethnic musics, ragtime, city blues and jazz, rock, musical theater, impact of technology, modernism, nationalism, new accessibility.

Mus 5647. 20th-Century European/American Music. (3 cr. Prereq—3603 or equiv, 5501 or equiv, 12 undergrad cr in music history). Emphasizes major artistic movements, stylistic turning points, social roles of music. Interactions between high art, popular, ethnic musics; contributions of men and women as composers and performers.

Mus 5658. History of the Symphony in the 20th Century. (3 cr; A-F only. Prereq—3603, 5501 or M). History of symphony (and related genres) in Europe and America, ca. 1890 to present. Changing aesthetic concerns, structural, harmonic, and timbral innovations. Sociocultural contexts; analysis and criticism.

Mus 5666. Stravinsky. (3 cr; A-F only. Prereq—5502, 12 music history cr). Analysis and criticism of representative works; aesthetic concerns as expressed in writings of Stravinsky and others; influence upon European and American composers; biographical issues and contributions to artistic life, particularly the ballet.

Mus 5668. Beethoven’s Symphonies. (3 cr; A-F only. Prereq—3603, M). Analytical overview of selected movements from Beethoven’s 9 symphonies. Principles of sonata analysis (norm and deformation); introduction to wider contexts of interpretation and understanding (generic, expressive, social).

Mus 5804. Folk and Traditional Musics: Selected Cultures of the World. (3 cr; A-F only. Prereq—1801 or 1804 or music grad or M). A study of selected music traditions from 5 to 7 world cultures. Genres, social institutions, concepts, styles, instruments, and usages.

Mus 5950. Topics in Music. (1-4 cr (max 15 cr)). Each offering focuses on a single topic. Topics specified in Class Schedule.


Music Applied (MusA)

School of Music
College of Liberal Arts

Note: MusA 1101 through MusA 1123 are private instruction and include the following: (2 cr (max 16 cr); A-F only. Prereq—Audition, A, S).

MusA 1101. Piano—Elective.
MusA 1102. Harpsichord—Elective.
MusA 1103. Organ—Elective.
MusA 1104. Voice—Elective.
MusA 1105. Violin—Elective.
MusA 1106. Viola—Elective.
MusA 1107. Cello—Elective.
MusA 1109. Flute—Elective.
MusA 1111. Oboe—Elective.
MusA 1112. Clarinet—Elective.
MusA 1113. Saxophone—Elective.
MusA 1114. Bassoon—Elective.
MusA 1115. French Horn—Elective.
MusA 1116. Trumpet—Elective.
MusA 1117. Trombone—Elective.
MusA 1118. Euphonium—Elective.
MusA 1119. Tuba—Elective.
MusA 1121. Percussion—Elective.
MusA 1122. Harp—Elective.
MusA 1123. Guitar—Elective.

Note: MusA 1301 through MusA 1523 are private instruction and, unless otherwise noted, include the following: (2-4 cr [max 16 cr]; A-F only. Prereq—Audition, ∆).

MusA 1301. Piano—Major.
MusA 1302. Harpsichord—Major.
MusA 1303. Organ—Major.
MusA 1304. Voice—Major.
MusA 1305. Violin—Major.
MusA 1306. Viola—Major.
MusA 1307. Cello—Major.
MusA 1309. Flute—Major.
MusA 1311. Oboe—Major.
MusA 1312. Clarinet—Major.
MusA 1313. Saxophone—Major.
MusA 1314. Bassoon—Major.
MusA 1315. French Horn—Major.
MusA 1316. Trumpet—Major.
MusA 1317. Trombone—Major.
MusA 1318. Euphonium—Major.
MusA 1319. Tuba—Major.
MusA 1321. Percussion—Major.
MusA 1322. Harp—Major.
MusA 1323. Guitar—Major.

Note: MusA 1301 through MusA 1323 are private instruction and include the following: (2-4 cr [max 16 cr]; A-F only. Prereq—Audition, ∆).

MusA 1301. Piano—Transfer.
MusA 1302. Harpsichord—Transfer.
MusA 1303. Organ—Transfer.
MusA 1304. Voice—Transfer.
MusA 1305. Violin—Transfer.
MusA 1306. Viola—Transfer.
MusA 1307. Cello—Transfer.
MusA 1308. Double Bass—Transfer.
MusA 1309. Flute—Transfer.
MusA 1311. Oboe—Transfer.
MusA 1312. Clarinet—Transfer.
MusA 1313. Saxophone—Transfer.
MusA 1314. Bassoon—Transfer.
MusA 1315. French Horn—Transfer.
MusA 1316. Trumpet—Transfer.
MusA 1317. Trombone—Transfer.
MusA 1318. Euphonium—Transfer.
MusA 1319. Tuba—Transfer.
MusA 1321. Percussion—Transfer.
MusA 1322. Harp—Transfer.
MusA 1323. Guitar—Transfer.

Note: MusA 1301 through MusA 1323 are private instruction and include the following: (2-4 cr [max 16 cr]; A-F only. Prereq—Audition, ∆).

MusA 1301. Piano—Performance Major.
MusA 1302. Harpsichord—Performance Major.
MusA 1304. Voice—Performance Major.
MusA 1306. Viola—Performance Major.
MusA 1309. Flute—Performance Major.
MusA 1311. Oboe—Performance Major.
MusA 1313. Saxophone—Performance Major.
MusA 1315. French Horn—Performance Major.
MusA 1316. Trumpet—Performance Major.
MusA 1317. Trombone—Performance Major.
MusA 1318. Euphonium—Performance Major.
MusA 1319. Tuba—Performance Major.
MusA 1321. Percussion—Performance Major.
MusA 1322. Harp—Performance Major.
MusA 1323. Guitar—Performance Major.

Note: MusA 1301 through MusA 1323 are private instruction and include the following: (2 cr [max 8 cr]; A-F only. Prereq—Audition, ∆).

MusA 1501. Piano—Elective.
MusA 1502. Harpsichord—Elective.
MusA 1503. Organ—Elective.
MusA 1504. Voice—Elective.
MusA 1505. Violin—Elective.
MusA 1506. Viola—Elective.
MusA 1507. Cello—Elective.
MusA 1508. Double Bass—Elective.

Note: MusA 1301 through MusA 1323 are private instruction and include the following: (2-4 cr [max 16 cr]; A-F only. Prereq—Audition, ∆).

MusA 1301. Piano—Transfer.
MusA 1302. Harpsichord—Transfer.
MusA 1303. Organ—Transfer.
MusA 1304. Voice—Transfer.
MusA 1305. Violin—Transfer.
MusA 1306. Viola—Transfer.
MusA 1307. Cello—Transfer.
MusA 1308. Double Bass—Transfer.
MusA 1309. Flute—Transfer.
MusA 1311. Oboe—Transfer.
MusA 1312. Clarinet—Transfer.
MusA 1313. Saxophone—Transfer.
MusA 1314. Bassoon—Transfer.
MusA 1315. French Horn—Transfer.
MusA 1316. Trumpet—Transfer.
MusA 1317. Trombone—Transfer.
MusA 1318. Euphonium—Transfer.
MusA 1319. Tuba—Transfer.
MusA 1321. Percussion—Transfer.
MusA 1322. Harp—Transfer.
MusA 1323. Guitar—Transfer.

Note: MusA 1301 through MusA 1323 are private instruction and include the following: (2-4 cr [max 16 cr]; A-F only. Prereq—Audition, ∆).

MusA 1301. Piano—Performance Major.
MusA 1302. Harpsichord—Performance Major.
MusA 1304. Voice—Performance Major.
MusA 1306. Viola—Performance Major.
MusA 1309. Flute—Performance Major.
MusA 1311. Oboe—Performance Major.
MusA 1313. Saxophone—Performance Major.
MusA 1315. French Horn—Performance Major.
MusA 1316. Trumpet—Performance Major.
MusA 1317. Trombone—Performance Major.
MusA 1318. Euphonium—Performance Major.
MusA 1319. Tuba—Performance Major.
MusA 1321. Percussion—Performance Major.
MusA 1322. Harp—Performance Major.
MusA 1323. Guitar—Performance Major.
MusA 5117. Trombone—Elective.
MusA 5118. Euphonium—Elective.
MusA 5119. Tuba—Elective.
MusA 5121. Percussion—Elective.
MusA 5122. Harp—Elective.
MusA 5123. Guitar—Elective.

Note: MusA 5401 through MusA 5423 are private instruction and include the following: (2-4 cr [max 24 cr]; A-F only. Prereq—Audition, S.).
MusA 5401. Piano—Secondary.
MusA 5403. Organ—Secondary.
MusA 5405. Violin—Secondary.
MusA 5406. Viola—Secondary.
MusA 5407. Cello—Secondary.
MusA 5409. Flute—Secondary.
MusA 5411. Oboe—Secondary.
MusA 5413. Saxophone—Secondary.
MusA 5415. French Horn—Secondary. (2-4 cr; Prereq—Audition, S)
MusA 5416. Trumpet—Secondary.
MusA 5417. Trombone—Secondary.
MusA 5418. Baritone—Secondary.
MusA 5419. Tuba—Secondary.
MusA 5421. Percussion—Secondary.
MusA 5423. Guitar—Secondary.

Music Education (MuEd)

School of Music
College of Liberal Arts

MuEd 1201. Introduction to Music Education. (1 cr; A-F only)
Orientation to the profession of music education through in-school observations, readings, presentations, and self-reflection. Introduction to technology for music educators.

MuEd 1801. Introduction to Music Therapy. (2 cr; A-F only)
Methods, materials, and applications of music therapy in various clinical settings with emphasis on field observation.

MuEd 3301. Teaching Elementary Vocal and General Music. (3 cr; A-F only. Prereq—Music ed major)
Methods, materials, curriculum development, principals of learning, the child voice, rhythm, music reading, history, appreciation, listening, creativity, classroom instruments, and applications of technology for elementary school classroom music.

MuEd 3350. Student Teaching in Classroom Music. (4-8 cr; max 8 cr; A-F only. Prereq—Music ed major, S)
Supervised teaching and observing of classroom and general music in elementary, junior high, and senior high schools. Weekly seminar emphasizing classroom management, curriculum development, and administration of music programs.

MuEd 3415. Choral Conducting and Methods I. (4 cr; A-F only. Prereq—Music ed major or music therapy major or grad)

MuEd 3416. Choral Conducting and Methods II. (4 cr; A-F only. Prereq—Music ed major or grad)

MuEd 3450. Student Teaching in Vocal Music. (4-8 cr; max 8 cr; A-F only. Prereq—Music ed major, S)
Supervised teaching and observing of vocal music in elementary, junior high, and senior high schools. Weekly seminar emphasizing classroom management, curriculum development, and administration of music programs.

MuEd 3502. String Techniques and Teaching. (2 cr; A-F only. Prereq—Music ed major or grad)
Playing experience on orchestral string instruments; historical and acoustical background; scoring for strings; principles of improvisation; basic concepts of teaching; methods and materials; techniques of individual and class instruction.

MuEd 3503. Woodwind Techniques and Teaching. (2 cr [max 3 cr]; A-F only. Prereq—Music ed major or grad)
Playing experience on instruments of the woodwind family; historical and acoustical background; scoring for brasses; principles of improvisation; basic concepts of teaching; methods and materials; class instruction.

MuEd 3504. Brass Techniques and Teaching. (2 cr; A-F only. Prereq—Music ed major or grad)
Playing experience on instruments of the brass family; historical and acoustical background; scoring for brasses; principles of improvisation; basic concepts of teaching; methods and materials; class instruction.

MuEd 3505. Percussion Techniques and Teaching. (2 cr; A-F only. Prereq—Music ed major or grad)
Playing experience on percussion instruments; historical and acoustical background; scoring for percussion; principles of improvisation; basic concepts of teaching; methods and materials; techniques of individual and class instruction.

MuEd 3516. Instrumental Methods and Conducting I. (3 cr; A-F only. Prereq—Music ed major)

MuEd 3517. Beginning Instrumental Methods and Materials. (3 cr; A-F only. Prereq—[MuEd 3501, 3502, 3503, 3504, 3516, Mus 3401] with at least C+)
Development of skills for teaching beginning instrumentalists.

MuEd 3518. Instrumental Methods and Conducting II. (3 cr; A-F only. Prereq—[MuEd 3501, 3502, 3503, 3504, 3516, 3517, Mus 3401] with at least C+)
Students synthesize knowledge/skills to develop/ maintain curricular-oriented, comprehensive instrumental music program.

MuEd 3550. Student Teaching in Instrumental Music. (4-8 cr [max 8 cr]; A-F only. Prereq—Music ed major, S)
Supervised teaching and observing of instrumental music in elementary, junior high, and senior high schools. Weekly seminar emphasizing classroom management, curriculum development, and administration of music programs.

MuEd 3650. Student Teaching Seminar. (2 cr; A-F only. Prereq—At least C in all required [music education, professional education] courses)
Reflective practice during student teaching. Developing materials for professional employment (e.g., resume, portfolio).

MuEd 3800. Introduction to Clinical Music Therapy Practice. (4 cr; A-F only. Prereq—Music Therapy major or grad)
Introduction to lab and field studies of music therapy and music behavior. Pre-internship experiences in health, welfare, recreational, and educational settings.

MuEd 3804. Applications of Music Therapy I: Music Therapy for Children in Rehabilitative Settings. (4 cr; A-F only. Prereq—Music Therapy major)
Examination of specific techniques in quantification of study of music behavior; projects using behavioral observations.

MuEd 3805. Applications of Music Therapy II: Music Therapy in Long Term Care and Psychiatric Care. (4 cr; A-F only. Prereq—Music Therapy major or grad)
Methods and materials for music therapy in school and hospital settings; designing and implementing programs for severely and moderately handicapped children and adults.

MuEd 3806. Preparing for a Music Therapy Career. (4 cr; A-F only. Prereq—Music Therapy major or grad)
Identify and explore current controversies, issues, and values encountered in music therapy. Explore and analyze counseling processes and techniques. Students are placed in a health care facility for the term to gain pre-internship experience.

MuEd 3855. Music Therapy Internship. (12 cr; S-N only. Prereq—Music Therapy major, grad)
Six-month resident internship in music therapy at an affiliated, approved hospital or clinic.

Overview of the fundamentals of music, methods, and materials for incorporating singing, rhythmic activities, classroom instruments, movement, listening, appreciation, and creation into the context of classroom curriculum.

MuEd 5112. Research in Music Education: Techniques. (3 cr; A-F only. Prereq—Grad music ed major or grad)
Methods and techniques employed in investigating and reporting music education problems; proposal development; bibliographic skills involved in conducting a significant review of related research.

MuEd 5115. Research in Music Education: Measurement. (3 cr; A-F only)
Assessment of music behaviors, including test design, interpretation of test results, and evaluation and reporting of student achievement; published tests in music; uses of assessment and measurement in the classroom and in research.

MuEd 5131. Foundations of Music Education. (3 cr; A-F only)
An overview of the historical, philosophical, and psychological foundations of music education.

MuEd 5313. Youth Music: Preferences, Influences, and Uses. (2 cr; A-F only)
Youth music preferences and their determinants; how music influences youth behavior; students’ and teachers’ uses of commercial styles. Particularly appropriate for educators and parents.

MuEd 5433. Techniques and Materials: Choral Ensembles. (2 cr; A-F only. Prereq—Music or music ed major or grad)
Research and literature on vocal and choral music education; choral curriculum issues; repertoire selection; rehearsal techniques.

MuEd 5606. Movement-Based Methods for Music Education. (2 cr; A-F only. Prereq—Music or music ed major or grad)
Participation in movement activities; study of Dalcroze philosophy and techniques; applications of movement to music education; examination of research.

MuEd 5611. Teaching Music With Related Arts. (2 cr; A-F only)
Contemporary approaches for teaching music in the schools; development of curricular materials and practice in performance techniques.

MuEd 5655. New Dimensions in Music Education. (2 cr; A-F only)
Analysis of recent curricular trends and current issues.
Course Descriptions

NRES 1480. Topics in Natural Resources. (1-4 cr [max 6 cr])
Lectures by visiting scholar or regular staff member. Topics specified in Class Schedule.

NRES 1905. Freshman Seminar. (1-3 cr)
In-depth study of issues/topics related to natural resources and the environment. Topics vary and are announced each semester.

NRES 3000. Colloquium: Natural Resources and Environmental Studies. (1 cr [max 6 cr]; A-F only)
Lectures from experts. Readings/discussions of current environmental topics/issues. Topics vary, see Class Schedule.

NRES 3001. Colloquium: Perspectives on Treaty Rights. (2 cr; A-F only)
Readings, class discussion about nature of treaty rights reserved by indigenous Americans with respect to utilization of natural resources. Emphasizes Midwest issues. Web-assisted course. Meets with 5001.

NRES 3002. Colloquium: Exotic Plants and Animals. (1 cr; A-F only)
Current exotic plants/animals in Great Lakes region and around the world. Gypsy moths, brown tree snakes, zebra mussels, Eurasian watermilfoil. Impact/control. Readings, discussions with experts on topics such as invasion theory and real world management.

NRES 3003H. Honors Colloquium. (1 cr [max 2 cr]; A-F only. Prereq—[Fr or soph], CRR honors, #)
Lectures from experts, readings, discussions of current environmental topics/issues. Topics vary, see Class Schedule.

NRES 3011W. Ethics, Conflict, and Leadership in Resource Management. (3 cr)
Normative ethics/leadership considerations applicable to managing natural resources in environment. Readings, discussion.

NRES 3021. Plant Resource Management and the Environment. (3 cr. Prereq—Biol 3008 or EEB 3001 or FR 3104 or #)
Application of ecological concepts such as succession/competition to ecosystems under management. Wetlands, riparian zones, urban interfaces, agriculture, agroforestry. Northern, boreal conifer, and hardwood forests. Grasslands/praire. Emphasizes management objectives, methods, impacts. Evaluating practices for sustainability. Integrating social issues. Regional (Great Lake area), national, and global case studies.

NRES 3051. Experience and Training in a Field Setting. (1-3 cr; A-F only. Prereq—#)
Students give oral presentation and produce formal paper/project on topic related to their experience and chosen in consultation with faculty adviser.

NRES 3101. Conservation of Plant Biodiversity. (3 cr; A-F only. Prereq—Biol 1001 or Biol 1009)
Introduction to principles underlying assessment/conservation of plant biodiversity at individual, population, and community levels. Case studies in management of biodiversity to restore/maintain ecosystem function. Issues such as genetics, timber harvesting, invasive species, plant reproduction.

NRES 3202W. Social Change: Dispute Resolution, Leadership, and Partnerships. (3 cr; A-F only)
Negotiation of natural resource management issues. Collaborative planning. Case study approach to conflict management, strategic planning, and building leadership qualities.

NRES 3205. Field Ecology in NRES. (4 cr. Prereq—[Biol 1001 or Biol 1009], [Biol 3407 or FR 3104 or equiv])

NRES 3211. Survey, Measurements, and Modeling in Natural Resources. (3 cr. Prereq—[Math 1142 or Math 1271], Stat 3011)
Introduction to survey, measurement, and modeling concepts/methods for study of natural resources and environmental issues. Emphasizes survey design for data collection, estimation, and analysis for issues encompassing land, water, air, climate, vegetation, soil, and human/social variables. Practical examples.

NRES 3241W. Natural Resource Policy and Administration. (3 cr. Prereq—ApEc 1101 or Econ 1101)
Political/administrative concepts for natural resources and environmental policy/program development. Case study approach. Policy/legislative process, participants in policy development, public programs. Federal/state laws/regulations, international issues.

NRES 3245. Recreation Policy and Landscape-Level Planning. (3 cr; A-F only. Prereq—All lower div BBM reqs)
Overview of policies that affect recreation at local, state, and federal levels. Landscape-level planning. Collaborative relationships as means to implement sustainable natural/social policy. Class project involves all aspects of implementing recreation policy, from public meetings to hands-on evaluation of options.

NRES 3261W. Economics and Natural Resources Management. (4 cr; A-F only)

NRES 3340. Topics in Natural Resources. (1-4 cr [max 6 cr])
Lectures by visiting scholar or regular staff member. Topics specified in Class Schedule.

NRES 3357. Wetlands Conservation. (3 cr. §5575)
Freshwater wetland classification, wetland biota, current/historic status of wetlands, value of wetlands. National, regional, Minnesota wetlands conservation strategies, ecological principles used in wetland management.

NRES 3601. Our Home, Our Environment. (3 cr; A-F only)

NRES 4061. Water Quality: Management of a Natural Resource. (3 cr. Prereq—Grad student)

NRES 4061W. Water Quality: Management of a Natural Resource. (3 cr; A-F only)

NRES 4062. Advanced Water Quality. (3 cr. Prereq—[3061, EEB 4601, CE 4541] or #)
Problem based approach to water quality assessment, designing a monitoring/communication program. Field/lab portions: conduct, interpret, and report water quality chemical, physical, and biological variables in an on-campus stream-wetland complex.

For definitions of course numbers, symbols, and abbreviations, see page 296.
NRES 419SW. Problem Solving in Natural Resources and Environmental Studies. (4 cr; A-F only. Prereq–NRES, B or in area of concentration) or [3245, FR 3131, FR-4232, RM1, Jr] Applying problem solving tools/skills in policy, planning, and managerial situations. Students work with ‘real world’ client, produce publishable technical report, and present results of their work in a professional public forum.

NRES 4200H. Honors Seminar. (1 cr; A-F only. Prereq–NRES upper div honors, #) Topics presented by faculty, students, guest speakers. Lecture/discussion.


NRES 4293. Directed Study. (1-5 cr [max 12 cr]. Prereq–#) Student selects and conducts a study of or project on a topic of personal interest in consultation with faculty member. The course is documented by initial proposal and reports of accomplishment.

NRES 429SW. GIS for Problem Solving in Environmental Science and Management. (4 cr; A-F only. Prereq–FR 3131 or #) Application of spatial data inventory/analysis in complex environmental planning problems. Data collection, database development. GPS, DLG, TIGER, NWI data, spatial analysis. Topics identified by non-University partners.

NRES 4800H. Colloquium: Natural Resource Interpretation. (2 cr; A-F only. Prereq–NRES upper div honors, #) Independent research project supervised by faculty member.


NRES 5000. Colloquium: Natural Resources and Environmental Studies. (1 cr [max 6 cr]; A-F only) Lectures from experts, readings, discussions of current environmental topics/issues. Topics vary, see Class Schedule.

NRES 5001. Colloquium: Perspectives on Treaty Rights. (2 cr [max 4 cr]) Readings, class discussion about treaty rights reserved by indigenous Americans with respect to use of natural resources. Emphasizes Midwest issues. Web-assisted course. Meets with 3001.


NRES 5021. Plant Resource Management and the Environment. (3 cr. Prereq–Grad student or #) Application of ecological concepts such as succession/competition to ecosystems under management. Wetlands, riparian zones, urban interfaces, agriculture, agroforestry. Northern, boreal, conifer, and hardwood forests. Grasslands/prairie. Management objectives, methods, and impacts. Sustainability, social issues. Regional (Great Lakes area), national, and global case studies.


NRES 5062. Advanced Water Quality. (3 cr. Prereq–Grad student or #) Problem based approach to water quality assessment, designing a monitoring/communication program. Field/lab portions: conduct, interpret, and report water quality chemical, physical, and biological variables in an on-campus stream-wetland complex.

NRES 5101. Conservation of Plant Biodiversity. (3 cr; A-F only. Prereq–Grad student or #) Introduction to principles underlying assessment/conservation of plant biodiversity at individual, population, and community levels. Case studies in management of biodiversity to restore or maintain ecosystem function. Genetics, timber harvesting, invasive species, plant reproduction.

NRES 5195. Problem Solving in Natural Resources and Environmental Studies. (4 cr; A-F only. Prereq–Grad student or #) Applying problem solving tools/skills in policy, planning, and managerial situations. Students work with ‘real world’ client to produce publishable technical report, present results in professional public forum.


NRES 5211. Survey, Measurements, and Modeling in Natural Resources. (3 cr. Prereq–Grad student or #) Introduction to survey, measurement, and modeling concepts/methods for study of natural resources and environmental issues. Emphasizes survey design for data collection, estimation, and analysis for purposes of encompassing land, water, air, vegetation, animal, soil, and human/social variables. Practical examples.


NRES 5245. Recreation Policy and Landscape-Level Planning. (3 cr; A-F only. Prereq–Grad student or #) Overview of policies that affect recreation at local, state, and federal levels. Landscape-level planning. Collaborative relationships as means to implement sustainable natural/social policy. Class project involving all aspects of implementing recreation policy, from public meetings to hands-on evaluation of options.


NRES 5295. GIS for Problem Solving in Environmental Science and Management. (4 cr; A-F only. Prereq–Grad student or #) Application of spatial data inventory/analysis in complex environmental planning problems. Data collection, database development. GPS, DLG, TIGER, NWI data. Spatial analysis. Topics identified by non-University partners.

NRES 5335. Natural Resources Planning. (4 cr; A-F only. Prereq–Grad student or #) Natural resource planning for multiple resource uses. Techniques/models for evaluating/assessing tradeoffs among alternative management plans. Case studies, laboratory exercises.


NRES 5480. Topics in Natural Resources. (1-4 cr [max 6 cr]. Prereq–Sr or grad student) Lectures by visiting scholar or regular staff member. Topics specified in Class Schedule.

NRES 5482. Biosafety Science and Policy. (3 cr) Scientific/policy approaches to governing use of new biological technologies, such as genetic engineering and its products (e.g., growth-enhanced, transgenic fish), for equity/safety.


NRES 5703. Agroforestry: Role in Watershed Management. (2 cr) Biological, physical, and environmental aspects. Coupling production with watershed protection. Implications for policy, economics, and human dimensions in sustainable development. Case studies from North America and developing countries.


Naval Science (Nav) Department of Naval Science (Naval ROTC) Office of the Executive Vice President and Provost

Nav 1000. Professional Training in Naval Science. (1 cr [max 1 cr]; S-N only. Prereq–Fresh enrolled in NROTC) Instruction and training in basic military subjects and professional development, including military leadership, close order drill, marksmanship, honors and ceremonies, personnel inspections, and computer-based war game simulations. Classes and small group seminars on leadership and ethical issues with case studies.

Nav 1101. Introduction to Naval Science. (3 cr; A-F only) Navy organization, customs and traditions, officer and enlisted rank and rating structures, uniforms and insignia, shipboard duties, seamanship, damage control, and safety. Core values of the naval services, Navy regulations, and the Uniform Code of Military Justice.

Nav 1102. Seapower and Maritime Affairs. (3 cr; A-F only) Historical influences on development of U.S. Navy, from American Revolution to present. Critical, contemporary issues.
Course Descriptions

Department of Neuroscience

Medical School


NSci 3102W. Introduction to Neuroscience II: Biological Basis of Behavior. (3 cr.; A-F only. §Phsl 3102, §Bio 3102, §Bio 3102W. Prereq–Bio/NSci 3101 or NSci 3101 or Phil 3101) Organization of neural systems/subsystems underlying sensory/motor aspects of behavior. Writing intensive.

NSci 4105. Neurobiology Laboratory I. (1.5 cr.; A-F only. §Bio 3105, §Bio 4105, §Phsl 3105. Prereq–[3101 or Biol 3101 or Phil 3101], [3102W or Bio 3102W], §) Principles, methods, and laboratory exercises for investigating neural mechanisms and examining experimental evidence.

NSci 4115. Neurobiology Laboratory II. (1.5 cr.; A-F only. §Bio 3115, §Bio 4115, §Phsl 3115. Prereq–[3101 or Biol 3101 or Phil 3101], [3102W or Bio 3102W], §) Principles, methods, and laboratory exercises for investigating neural mechanisms and examining experimental evidence.

NSci 4151. Advanced Topics in Neuroscience. (3 cr.; A-F only. §Phsl 4151. Prereq–Bio/NSci/Phsl 3101 or §) In-depth study of aspects of neurodevelopment, neurochemistry/molecular neurobiology, sensory systems, motor control, and behavioral neuroscience. Primarily for undergraduates majoring in neuroscience or related areas.

NSci 4793W. Directed Studies: Writing Intensive. (1.75 cr.; max 7 cr.; S-N only. Prereq–§A; no more than 7 cr of [4793, 4794, 4939, 4994] may count toward major requirements) Individual study of selected topics. Emphasis on readings, use of scientific literature. Writing intensive.

NSci 4794W. Directed Research: Writing Intensive. (1.75 cr.; max 7 cr.; S-N only. Prereq–§A; no more than 7 cr of [4793, 4794, 4939, 4994] may count toward major requirements) Lab or field investigation of selected areas of research. Writing intensive.

NSci 4993. Directed Studies. (1.75 cr.; max 7 cr.; S-N only. Prereq–§A, §, max of 7 cr of 4993 and/or 4994 may count toward major requirements) Individual study of selected topics with emphasis on selected readings and use of scientific literature.

NSci 4994. Directed Research. (1.75 cr.; max 7 cr.; S-N only. Prereq–§A, §, max of 7 cr of 4993 and/or 4994 may count toward major requirements) Lab or field investigation of selected areas of research.

NSci 5101. Introduction to Neuroscience for Graduate Students. (3 cr.; A-F only. §3101, §Bio 3101, §Phsl 3101. Prereq–Bio/Bio C 3201 or Bio 4331; §) intended for grad students outside neuroscience program who require comprehensive intro) Basic principles of cellular/molecular neurobiology and nervous system. A term paper supplements lectures. Multiple-choice exams.

NSci 5110. Dental Neuroscience for Graduate Students. (2 cr.; A-F only. §Bio 3201, Bio 4004, §) intended for grad students who require a comprehensive grad-level neuroscience course) Structure/function of human nervous system. Lectures and reading assignments emphasize topics pertinent to dentistry.

Neuroscience (NSc)

College of Biological Sciences

NSc 4185. Itasca Summer Neurobiology Laboratory. (3 cr.; A-F only. Prereq–§A, §) Concepts in cellular neurosciences. Basis of membrane properties, including ionic/molecular mechanisms of receptor synaptic potentials. State-of-the-art equipment and contemporary techniques used to examine experimental evidence.

NSc 5031W. Perception. (3 cr. Prereq–Psy 3031 or Psy 3031 or §) Cognitive, computational, and neuroscience perspectives on visual perception. Color vision, pattern vision, image formation in eye, object recognition, reading, impaired vision. Course is biennial: offered fall of odd years.

NSc 5034. Psychology of Vision. (3 cr. Prereq–Psy 3031 or §) Analysis of the properties and biological bases of visual perception in humans and animals. Emphasis on color vision, visual sensitivity and adaptation, nerve cells and circuits in the eye, structure and function of the visual brain.

NSc 5037. Psychology of Hearing. (3 cr. Prereq–Psy 3031 or §) Biological and physical aspects of hearing, auditory psychophysics, theories and models of hearing, perception of complex sounds including music and speech, clinical and other applications.


NSc 5461. Cellular and Molecular Neuroscience. (4 cr.; A-F only. Prereq–NSc grad student or §) Lectures by team of faculty, problem sets in important physiological systems, discussion of original research papers.

NSc 5462. Neuroscience Principles of Drug Abuse. (2 cr. Prereq–§A) Current research on drugs of abuse, their mechanisms of action, characteristics shared by various agents, and neural systems affected by them. Offered biennially, spring semester of even-numbered years.

NSc 5481. Invertebrate Neurobiology. (2 cr.; A-F only. §3101) Fundamental principles/concepts underlying cellular bases of behavior and “systems” neuroscience. Particular invertebrate preparations. Offered annually the last 10 weeks of spring semester.


NSc 5661. Behavioral Neuroscience. (3 cr.; A-F only. Prereq–Grad NSc major or grad NSc minor or §) Neural coding/representation of movement parameters. Neural mechanisms underlying higher order processes such as memorization, memory scanning, and mental rotation. Emphasizes experimental psychological studies in human subjects, single cell recording experiments in subhuman primates, and artificial neural network modeling.

Nav 2000. Professional Training in Naval Science. (1 cr; max 1 cr.; S-N only. Prereq–Soph enrolled in NROTC) Instruction and training in basic military subjects and professional development, including military leadership, close order drill, marksmanship, honors and ceremonies, personnel inspections, and computer-based war game simulations. Classes and small group seminars on leadership and ethical issues with case studies.


Nav 3000. Professional Training in Naval Science. (1 cr; max 1 cr.; S-N only. Prereq–Jr enrolled in NROTC) Instruction and training in basic military subjects and professional development, including military leadership, close order drill, marksmanship, honors and ceremonies, personnel inspections, and computer-based war game simulations. Classes and small group seminars on leadership and ethical issues with case studies.


Nav 3310. Evolution of Warfare. (3 cr; A-F only) Great military leaders of history. Development of warfare, from dawn of recorded history to present. Development of strategists, tacticians, technological developments.

Nav 4000. Professional Training in Naval Science. (1 cr; max 1 cr.; S-N only. Prereq–Sr enrolled in NROTC) Instruction and training in basic military subjects and professional development, including military leadership, close order drill, marksmanship, honors and ceremonies, personnel inspections, and computer-based war game simulations. Classes and small group seminars on leadership and ethical issues with case studies.


Nav 4402. Leadership and Ethics. (3 cr; A-F only. Prereq–4401) Junior officer role. Responsibilities faced as leader, manager, professional officer of Naval Services. Developed specific competencies in areas of leadership, management, professional administration, development. Emphasizes Naval Service ethics, core values.

Nav 4410. Amphibious Warfare. (3 cr; A-F only) Development of amphibious doctrine, its expansion in Pacific Campaign of World War II. Detailed case studies of Tarawa, Iwo Jima, Okinawa illustrate amphibious planning.

Neuroscience Department (NSci)
Norwegian (Nor)

Department of German, Scandinavian, and Dutch
College of Liberal Arts

Nor 1001. Beginning Norwegian. (5 cr)
Emphasis on working toward novice-intermediate low proficiency in all four language modalities (listening, reading, speaking, writing). Topics include everyday subjects (shopping, directions, family, food, housing, etc.).

Nor 1002. Beginning Norwegian. (5 cr. Prereq–1001)
Continues the presentation of all four language modalities (listening, reading, speaking, writing) with a proficiency emphasis. Topics include free-time activities, careers, and the Norwegian culture.

Nor 1003. Intermediate Norwegian. (5 cr. Prereq–1002)
Emphasis on intermediate proficiency in listening, reading, speaking, and writing. Contextualized work on grammar and vocabulary is combined with authentic readings and essay assignments.

Nor 1004. Intermediate Norwegian. (5 cr. Prereq–1103)
Emphasis on developing intermediate mid-high proficiency in listening, reading, speaking, and writing. Contextualized work on grammar and vocabulary is supported by work with authentic readings and essay assignments.

Nor 1010. Online Basic Norwegian. (2 cr. (max 8 cr))
Norwegian language/culture. Travel, weather, family, work, school, daily life. Students meet for orientation and midterm, then work at own pace using multimedia Web curriculum. Instructor-student interactions through e-mail, threaded discussions, and audio messages.

Nor 3011. Advanced Norwegian. (4 cr. Prereq–Passing score on GPT)
Designed to help students achieve advanced proficiency in Norwegian. Discussion of fiction, film, journalistic, and professional prose is complemented by work with authentic readings and essay assignments.

Nor 3012. Advanced Norwegian. (4 cr. Prereq–Passing score on GPT)
Discussion of novels, short stories, plays, articles complemented by structural, stylistic, vocabulary-building exercises.

Nor 4001. Beginning Norwegian. (2 cr. 5100, Prereq–Passing score on GPT in another language or grad)
Meets concurrently with Nor 1001; see Nor 1001 for description. This option is designed for students who have satisfied the GPT requirements in another language or are graduate students or are otherwise exempt.

Nor 4002. Beginning Norwegian. (2 cr. 5100, Prereq–Passing score on GPT in another language or grad)
Meets concurrently with Nor 1002; see Nor 1002 for description. This option is designed for students who have satisfied the GPT requirements in another language or are graduate students or are otherwise exempt.

Nor 4003. Intermediate Norwegian. (2 cr. 5100, Prereq–Passing score on GPT in another language or grad)
Meets concurrently with Nor 1003; see Nor 1003 for description. This option is designed for students who have satisfied the GPT requirements in another language or are graduate students or are otherwise exempt.

Nor 4004. Intermediate Norwegian. (2 cr. 5100, Prereq–Passing score on GPT in another language or grad)
Meets concurrently with Nor 1004; see Nor 1004 for description. This option is designed for students who have satisfied the GPT requirements in another language or are graduate students or are otherwise exempt.

Nursing (Nurs)
School of Nursing

Nurs 1020. Challenge of Nursing. (2 cr; 5-N only)

Nurs 1800. Nursing Topics. (1-4 cr. Prereq–#)
Topics not included in regular courses.

Nurs 3690. Life Span, Growth, and Development I. (2 cr. Prereq–One general psychology and one general biology course or #)
An introductory, multimedia course that incorporates biological, sociological, and psychological perspectives of human life span development from the prenatal period through young adulthood.

Nurs 3691. Life Span, Growth, and Development II. (1 cr. Prereq–3690, one general psychology and one general biology course or #)
An introductory, multimedia course that incorporates biological, sociological, and psychological perspectives of human life span development for the period of young adulthood through aging and the death experience.

Nurs 3800. Nursing Topics. (1-4 cr. Prereq–#)
Topics not included in regular courses.

Nurs 4000. Introduction to Public Health. (2 cr. Prereq–Completed 15 cr)
Health/risk factors of populations. Principles of epidemiology, environmental health applied to selected public health issues. Emphasizes factors that affect health, distribution of health care resources.

Nurs 4100. Introduction to Nursing, Health, and Health Promotion. (5 cr. Prereq–4000, 4101, 4103, 4104)
Nature of nursing/nursing practice and relations among their foundational concepts: health, person, environment. Concepts of health, health assessment, and health promotion for individuals within context of family/community.

Nurs 4101. Clinical Practicum: Health and Health Promotion. (4 cr. Prereq–#)

Nurs 4103. Therapeutic Communication in Health Care. (3 cr. Prereq–1410, 1411, 14104)
Principles of interpersonal communication with clients/other health professionals. Interacting with clients, families, and communities.

Nurs 4104. Ethical Sensitivity and Reasoning in Health Care. (2 cr. Prereq–1410, 1411, 14103 or #)
Range/complexity of ethical issues/dilemmas in health care. Ethical concepts, principles, and theories. Addressing specific morally troubling issues in health care settings.

Nurs 4200. Care of Adults With Health Disruptions I: Physiological Conditions. (6 cr. Prereq–1400, 4101, 4103, 4104, 4202, 4205, 4210 or 4212, 4302, 4303)

Nurs 4202. Core Interventions for Nursing Practice. (2 cr. Prereq–[4200, 4205, 4210] or [4202, 4300, 4310])
Psychomotor skills in core nursing, complementary, and delegated medical interventions for persons/families, throughout the life span, experiencing health disruptions/developmental transitions.

Nurs 4205. Nursing Theory and Research. (3 cr. Prereq–Undergrad in Nurs, 4200, 4202, 4210 or 4202, 4300, 4310)
Examine knowledge basic to the discipline and practice of nursing. Relationships among research, theory/theoretical formulations, and practice. Research process is introduced with attention to utilization of research in practice.

Nurs 4205V. Honors: Nursing Theory and Research. (3 cr. Prereq–Nurs honors)
Knowledge basic to discipline/practice of nursing. Relationships among research, theory/theoretical formulations, and practice. Research process is introduced with attention to utilization of research in practice.

Nurs 4210. Care of Adults with Health Disruptions II: Psychiatric Illnesses. (4 cr. Prereq–[4100, 4101, 4103, 4104, 4200, 4202, 4205])
Forming therapeutic relationships with clients experiencing psychiatric illnesses. Collaborating with multidisciplinary team to assess biopsychosocial needs, develop holistic plan of care, help clients negotiate care, and evaluate client outcomes.

Nurs 4300. Family-Centered Nursing Care of Infants, Children, and Adolescents. (6 cr. Prereq–4100, 4101, 4103, 4104, 4200, 4202, 4205 or [4302, 4306], 4310)
Caring for children/families when children are acutely or chronically ill. Situations/conditions common to children. Opportunities for practice at hospitals, health care agencies, schools, and community organizations.

Nurs 4302. Expanded Interventions for Nursing Practice. (2 cr. Prereq–4202, 4210, 4300, 4306, [4310 or 4200], 4306)
Building on core interventions for nursing practice to perform psychomotor skills in expanded nursing, complementary, and delegated medical interventions when caring for persons throughout the life span in differing contexts.

Nurs 4306. Health Care Delivery Systems. (3 cr. Prereq–[4205, 4300, 4302, 4310 or 4210, 4306]
Foundation for interpreting structure/processes of health care delivery. Roles of health professionals. Social, economic, technologic, political factors influencing health care quality, access, cost. Ethical implications of health resource use.

Nurs 4310. Holistic Care of Childbearing Families. (4 cr. Prereq–[4100, 4101, 4103, 4104, [4205, 4202, 4300] or [4302, 4303, 4306])
Nurse’s role during antepartum period, birth experience, and immediate postpartum phase. Health promotion, risk reduction, and active participation of clients to achieve optimum family health.

Nurs 4400. Health Care of Populations. (3 cr. Prereq–4200, 4210, 4300, 4302, 4306, 4310, 4401, 4402, 4404, 4406, 4410)
Synthesize knowledge and skills to promote and protect the health of populations through systematic assessment, planning, intervention, and evaluation. Emphasis on nursing research, roles, public health values, and collaborative activities promoting population health.
Nurs 4401. Health Care of Populations: Clinical Practice. (2 cr. Prereq–4200, 4210, 4300, 4302, 4306, 4310, 4401, 4403, 4404, 4406, 4410, 4411) Guided practice in population-based nursing to promote and protect health through systematic assessment, planning, intervention, and evaluation. Critical examination of interdisciplinary collaboration, partnering with culturally diverse populations, and ethical decision-making in public health.

Nurs 4402. Taking Ethical Action in Health Care. (1 cr) Distribution of scarce resources to meet health care needs in various health care settings. Ethics in a managed care environment. Increasing focus on how to take ethical action in health care.

Nurs 4404. Applied Nursing Research and Research Utilization. (2 cr. Prereq–4205 or #) Design and carry out a research project of limited scope to develop fundamental skills in systematic inquiry, and interpreting and evaluating research as it applies to nursing practice. The final product is a scholarly research project.


Nurs 4407H. Honors: Seeking Solutions to Global Health Issues. (2 cr. Prereq–[4404H, nursing honors student] or #) Global health issues from interdisciplinary perspective. Emphasizes cultural/societal sensitivity, complexities of issues, in order to propose realistic actions for resolution.

Nurs 4410. Critical Care Nursing. (3 cr. Prereq–4200, 4210, 4300, 4302, 4306, 4310, 4400, 4401, 4402, 4404, 4406) Acquire fundamental knowledge underlying the care of patients with life-threatening conditions and their families in a highly technological and unpredictable environment. Analyze relationships of multi-system alterations in functioning from complex physiological disruptions using advanced critical thinking and prioritization skills.

Nurs 4420. Managing Care of Adult Clients With Complex Health Conditions Across the Continuum. (3 cr. Prereq–4100, 4103, 4104, 4106, 4200, 4202, 4205, 4210, 4300, 4302) Coordination of comprehensive nursing care to clients with multi-system illnesses and complex socio-emotional situations, across settings and over time. Specialized strategies such as discharge planning, care paths, end-of-life interventions, and interdisciplinary collaboration. Emphasizes achieving quality health outcomes for clients and their families.


Nurs 4511. Practicum in Managing the Care of Adult Clients With Complex Health Conditions Across the Continuum. (4 cr. Prereq–4100, 4101, 4103, 4104, 4106, 4200, 4202, 4205V or 4205W, 4210, 4300, 4302, 4420) Students participate in coordinating comprehensive nursing care to clients and their families with complex/chronic health problems across settings and over time with a components used to assessing/implementing care for a group of clients. Functioning as an interdisciplinary team leader/member.

Nurs 4800. Nursing Topics. (1-16 cr. max 16 cr. Prereq–) Exploration of a topic to meet individual student needs.

Nurs 4801. Research Topics. (1-16 cr. max 16 cr. Prereq–) Exploration of research topic to meet individual student needs.

Nurs 5141. Ethical Issues in Health Care of Elders. (3 cr. Prereq–Grad student or nursing sr or #) Health care related ethical issues that confront elders, their families, health care providers, and society.

Nurs 5170. Research Topics. (1-16 cr. max 16 cr. Prereq–) Exploration of research topic to meet individual student needs.

Nurs 5171. SPSS Programming and Data Analysis. (2 cr. Prereq– Inferential statistics, [grad or professional] student or #) Skills needed to collect/analyze data using SPSS for Windows. Review of statistical methods.

Nurs 5172. Decision Making in Health Care. (2 cr. Prereq–Grad student, #) Selected classical conceptual models of decision making, their particular perspectives limitations/ usefulness for decision making about health care issues. Models and components used to assess, evaluate, teach, or help healthy people, patients, families, health care professionals, or policy making groups in making health care decisions.

Nurs 5200. Holistic Health Assessment and Therapeutics for Advanced Practice Nurses. (3 cr. Prereq–) Health assessment knowledge/skills for advanced nursing practice with patients across age span, including pregnancy. Selected nursing interventions, complementary therapies examined for application to specific populations/illnesses.

Nurs 5202. Introduction to Complementary Healing Practices. (3 cr) Historical and cultural context of the allopathic and complementary healing traditions. Philosophies and paradigms of selected complementary therapies and culturally based healing traditions; descriptions of selected interventions.


Nurs 5223. Assessment of Psychopathology for Advanced Practice Psychiatric/Mental Health Nursing. (4 cr. Prereq–Nurs grad or #) Advanced concepts from nursing theory and research, social sciences, neuropsychology, and neurophysiology used in the assessment of psychiatric symptoms and disorders across the age continuum. During clinical, develop proficiency in the assessment of psychopathology in clients with psychiatric symptoms.

Nurs 5224. Clinical Pharmacotherapeutics. (3 cr. Prereq–Grad, #) Advanced practice nurses in primary care get a foundation in pharmacotherapeutics across the life span. Topics include pharmacodynamics/kinetics/epidemiology, client patterns of medication use, selection of appropriate drugs for selected client conditions, and prescriptive writing privileges for advanced practice nurses.

Nurs 5225. Psychopharmacology for Advanced Practice Psychiatric/Mental Health Nursing. (3 cr. Prereq–Grad student or RN [with master's degree] or #) Advanced concepts in neuropsychopharmacology, and clinical management related to psychopharmacologic treatment of psychiatric disorders/symptoms. Application to problems in various clinical settings.

Nurs 5300. Health Behavior Intervention: Theory and Application. (3 cr. Prereq–Grad or #) Interdisciplinary course examines theoretical foundations and research base of intervention strategies to promote health behavior acquisition, behavioral change, and maintenance for adults (individuals and groups). Critical examination of health behavior and patterns and health risk assessment; approaches to program creation.

Nurs 5340. Group as a Health Care Intervention. (2 cr. Prereq–Grad or #) Theoretical concepts and research findings from the areas of group therapy and dynamics are applied in the development of a model for using group as an intervention for various client populations.

Nurs 5501. Professional Issues in Nurse-Midwifery. (1-2 cr. Prereq–Nurs grad major; #) Analysis of professional issues that confront and impact the practice of certified nurse-midwives. History and development of the professional organization including certification, legislation, ethical dimensions, public policy, and clinical practice issues.

Nurs 5520. Women's Issues: A Health Perspective. (3 cr. Prereq–Upper div or grad student) Multidisciplinary exploration and analysis of a broad range of women's health issues: physiological, developmental, historical, sociocultural, feminist, nursing and medical. Topics include health promotion and reproductive health issues across the life span.

Nurs 5601. School Nursing in the Educational System and the Community. (3 cr. A-F only. Prereq–3 yrs of college level courses) School health problems, assessment/intervention strategies. Integration of research findings. Applications with individuals, families, communities.

Nurs 5604. Advanced Health Assessment and Interventions With Adolescents. (2 cr. Prereq–CPsy 5303 or equiv or #) Integrates knowledge from nursing, public health, health behavior, and adolescent development as framework for developing health assessment/ intervention strategies for clinical practice with adolescents.

Nurs 5800. Nursing Topics. (1-4 cr. max 8 cr. Prereq–) Course allows students to study a topic not included in regular courses, or for faculty to offer a course to determine interest in a topic.


Nurs 5802. Spirituality and Nursing Practice. (2 cr. Prereq–For undergrad cr: nurs sr or RN; for grad cr: nurs grad student or #) Exploration of the concept of spirituality as integral to the whole person. Discussion of spiritual nursing care interventions.

For definitions of course numbers, symbols, and abbreviations, see page 296.
Nurs 5803. Transcultural Nursing: Theories and Issues. (2 cr. Prereq–Cultural anth course or #) Study of cultural factors that influence theories, issues, and nursing care practices in diverse cultures and subcultures. Emphasis on nursing within international systems of health care and nursing practices related to various health illnesses systems in this country and worldwide.

Nurs 5804. Therapeutic Healing Touch: Research and Practice. (2 cr; S-N only. Prereq–Upper div or grad) student in [health sciences or health care] Therapeutic/Healing Touch as energetic based, biofield healing modality. Art/science of this modality. Research literature related to Therapeutic Touch/Healing Touch. Explanations for effects. Practice of Therapeutic Touch, intervention techniques.

Nurs 5805. The ‘M’ technique. (1 cr; S-N only. Prereq–Undergrad nursing student or grad student in health sciences or health professional) Scientific/Theoretical foundations/practice of ‘m’ technique, a touch therapy for promoting relaxation by topically administering essential oils. Appropriate applications. Demonstration/practice of technique. Interdisciplinary course.

Nurs 5808. American Indian Health and Health Care. (2 cr. Prereq–Upper div or grad student or #) Examines health of native nations in Minnesota within historical-cultural contexts. Epidemiology of major health conditions, health services, traditional Indian medicine, health beliefs. Opportunities for contact with Native American community.

Nurs 5809. Seminars in Critical Care. (2 cr) Analyzes current research/developments in treatments, care delivery, and ethical issues affecting critically ill patients and their families. Students participate with team of multidisciplinary faculty from Center for Critical Care in critiquing/presenting literature and discussing applications to clinical practice.

Nurs 5830. Advanced Clinical Nursing. (1-6 cr. Prereq–Graduate nursing major or #) Independent study or faculty seminar on special clinical topic.

Operations and Management Science (OMS)

Department of Operations and Management Science

Curts L. Carlson School of Management

OMS 1550. Business Statistics: Data Sources, Presentation, and Analysis. (4 cr; A-F only. Prereq–Math 1031 or equiv; at least 20 cr) Exploratory data analysis, basic inferential procedures, statistical sampling/design, regression/time series analysis. How statistical thinking contributes to improved decision making.


OMS 3041. Project Management. (2 cr; A-F only. Prereq–3000 or #) Principles and methods useful for planning and controlling a project, including development of project planning and scheduling, and project monitoring and control. Selected computerized packages are studied, including PERT and CPM, and examples of different types of projects from manufacturing and service industries are used.

OMS 3056. Managing Supply Chain Operations. (4 cr; A-F only. Prereq–3001 or #) Decisions/tradeoffs managers face when directing operations of supply chain. Forecasting, capacity/product planning, just-in-time, theory of constraints, managing supply chain flows, enterprise resource planning (ERP), supply chain design.


OMS 5170. Simulation Modeling and Analysis. (4 cr; A-F only. Prereq–MBA 6120 or BA 1550 or #) Techniques and application of computer simulation modeling and analysis. Includes animations of existing or proposed real-world facilities and processes. Experiments in simulation programming language and environment. Simulation models and animations demonstrating actual operation of models. Planning, analysis, and interpretation of simulation experiment results.

Pharm 5102. Pharmacology for Pre-Nursing Students. (3 cr; A-F only. Prereq–Biochemistry, human physiology or #) Drug principles, mechanisms of action.

Pharm 5106. Pharmacology for Pharmacy Students. (3 cr; A-F only. Prereq–Regis 2nd yr pharmacy student) Action/fate of drugs. Lectures, labs.

Nurs 5803. Transcultural Nursing: Theories and Issues. (2 cr. Prereq–Cultural anth course or #) Study of cultural factors that influence theories, issues, and nursing care practices in diverse cultures and subcultures. Emphasis on nursing within international systems of health care and nursing practices related to various health illnesses systems in this country and worldwide.

Pharm 5106. Pharmacology for Pharmacy Students. (3 cr; A-F only. Prereq–Regis 2nd yr pharmacy student) Action/fate of drugs.

Pharm 5103. Pharmacology for Dental Students. (3 cr. Prereq–Regis dental student or #) Pharmacological principles/actions of drugs.

Pharm 5104. Problems in Pharmacology. (1-18 cr. Prereq–Upper div or grad student or #) Research projects and special problems by arrangement.

Pharm 5110. Introduction to Pharmacology. (2 cr (max 2 cr) A-F only. Prereq–Grad student or #) Basic principles of Pharmacology. Focuses on molecular mechanisms of drug action.

Pharm 5111. Pharmacogenomics. (3 cr; A-F only. Prereq–Grad student or #) Human genetic variation, its implications. Functional genomics, pharmacogenomics, toxicogenomics, proteomics, Interactive, discussion-based course.

Pharm 5210. Pharmacology. (1 cr; A-F only. Prereq–Grad student or #) Principles of pharmacology. Meets with 5211.

Pharm 5211. Pharmacology. (2 cr; A-F only. Prereq–5210 or #) Continuation of 5210. Meets with 5211. Lectures on the major classes of drugs.

Pharm 5212. Pharmacology. (3 cr; A-F only. Prereq–5211 or #) Continuation of 5211. Meets with 5212.

Pharm 5462. Neuropsychopharmacology of Abused Drugs. (3 cr. Prereq–5208. Prereq–5112, Psy 5062 or #) Principles of pharmacology and methodologies used to study relationships between drugs and biochemical, behavioral, and neurophysiological variables. Functional biogenic amine, peptidergic and other pathways; theories of tolerance of and/or dependence on stimulants, hallucinogens, depressants, and opiates.

Pharmacy (Pharm)
Philosophy (Phil)  
Department of Philosophy  
College of Liberal Arts  

Phil 1001. Introduction to Logic. (4 cr. §1021)  
Application of formal techniques for evaluating arguments.  

Phil 1001H. Honors Course: Introduction to Logic.  
(4 cr. §1021)  
Application of formal techniques for evaluating arguments.  

Phil 1002V. Honors: Introduction to Philosophy.  
(4 cr. §1006W, §1026W, §1102)  
Problems, methods, schools of philosophy (historical, contemporary).  

Phil 1002W. Introduction to Philosophy. (4 cr.  
§1006W, §1026W, §1102)  
Problems, methods, historical/contemporary schools of philosophy.  

Phil 1003V. Honors: Introduction to Ethics.  
(4 cr. §1103W)  
Central concepts, principal theories of moral philosophy.  

Phil 1003W. Introduction to Ethics.  
(4 cr. §1103)  
Central concepts, principal theories of moral philosophy.  

Phil 1004V. Honors: Introduction to Political Philosophy.  
(4 cr)  
Central concepts, principal theories of political philosophy.  

Phil 1004W. Introduction to Political Philosophy.  
(4 cr)  
Central concepts and principal theories of political philosophy.  

Phil 1005. Scientific Reasoning.  
(4 cr. Prereq–1st or 2nd yr student or #)  
Techniques for understanding/evaluating scientific information as presented in popular media and in specialized publications. Emphasizes general reasoning skills that do not require extensive training in particular sciences.  

Phil 1006W. Philosophy and Cultural Diversity.  
(4 cr. §1002W, §1026W, §1102)  
Central problems/methods of philosophy through culturally diverse texts. Focus is critical/comparative, reflecting a range of U.S. philosophical traditions.  

Phil 1102. Introduction to Philosophy. (4 cr. §1002W,  
§1006W, §1026W)  
Problems, methods, historical/contemporary schools of philosophy.  

Phil 1103. Introduction to Ethics. (4 cr. §1003W)  
Central concepts, principal theories of moral philosophy.  

Phil 1910W. Topics: Freshman Seminar. (3 cr;  
A-F only. Prereq–Fr or max 36 cr)  
Topics specified in Class Schedule.  

Phil 3001V. Honors: General History of Western Philosophy: Ancient Period. (4 cr)  
Major developments in ancient Greek philosophic thought: pre-Socrates, Socrates, Plato, Aristotle, Hellenistic thinkers.  

Phil 3001W. General History of Western Philosophy: Ancient Period. (4 cr)  
Major developments in ancient Greek philosophic thought: pre-Socrates, Socrates, Plato, Aristotle, Hellenistic thinkers.  

Phil 3005V. Honors: General History of Western Philosophy: Modern Period. (4 cr. §3005W)  
Prereq–Honors.  
Major developments in philosophic thought of modern period: renaissance beginnings, Descartes through Kant.  

Phil 3005W. General History of Western Philosophy: Modern Period. (4 cr. §3005V)  
Major developments in philosophic thought of the modern period: renaissance beginnings, Descartes through Kant.  

Phil 3010W. Classical Ancient Text. (3 cr)  
Introduction to and in-depth analysis of Plato’s Republic.  

Phil 3101. General History of Western Philosophy: Ancient Period. (4 cr)  
Major developments in ancient Greek philosophic thought: pre-Socrates, Socrates, Plato, Aristotle, Hellenistic thinkers.  

Phil 3105. General History of Western Philosophy: Modern Period. (4 cr. Prereq–§3005W or §3005V)  
Major developments in philosophic thought of modern period: renaissance beginnings, Descartes through Kant.  

Phil 3231W. Philosophy and Language. (4 cr)  
Philosophical issues concerning the nature and use of human language.  

Phil 3234W. Knowledge and Society. (4 cr)  
Critical discussion of concepts such as knowledge, objectivity, justification, rationality, evidence, authority, expertise, and trust in relation to the norms and privileges of gender, race, class, and other social categories.  

Phil 3302W. Moral Problems of Contemporary Society. (4 cr. §3322W, §3402)  
Selected moral problems of private/public life.  

Phil 3303W. Business Ethics. (4 cr; A-F only)  
Purpose of business, its obligations to various stakeholders (e.g., stockholders, customers, employees), its social function.  

Phil 3304W. Law and Morality. (4 cr)  
A study of the relationship among law, morality, and our role as citizens.  

Phil 3305. Medical Ethics. (4 cr)  
Moral problems confronting physicians, patients, and others concerned with medical treatment, research, and public health policy. Topics include abortion, living wills, euthanasia, genetic engineering, informed consent, proxy decision-making, and allocation of medical resources.  

Phil 3307W. Social Justice and Community Service. (4 cr)  
Exploration of concepts of justice, charity, equality, freedom, community service in connection with current social issues. Perspectives from philosophy, history, literature, and student involvement in the community. Community service for at least three hours per week.  

Phil 3308W. Social Justice and Community Service. (4 cr)  
Special exploration of diversity in connection with concepts of justice, charity, equality, freedom, community service. Perspectives from philosophy, history, literature, and student involvement in the community. Community service for at least three hours per week. Students may enroll in this course without having taken 3307.  

Phil 3311W. Introduction to Ethical Theory. (4 cr)  
Nature and justification of moral judgments and moral principles; analysis of representative moral views.  

Phil 3322W. Moral Problems of Contemporary Society. (3 cr. §3302W, §3402)  
Selected moral problems of private/public life.  

Phil 3402. Moral Problems of Contemporary Society. (4 cr. §3302W, §3322W)  
Selected moral problems of private/public life.  

Phil 3502W. Introduction to Aesthetics. (3 cr)  
Development of aesthetic theories with applications to several major philosophical styles.  

Phil 3601W. Scientific Thought. (4 cr. Prereq–One course in philosophy or natural science)  
Introduction to philosophical issues concerning the nature of scientific knowledge. Reading of historical and contemporary sources that describe major scientific achievements and controversies.  

Phil 3602. Science, Technology, and Society. (3 cr;  
A-F only)  
Philosophical issues that arise out of interaction between science, technology, society (e.g., religion and science, genetics and society, science and the environment).  

Phil 3602W. Science, Technology, and Society. (3 cr;  
A-F only)  
Philosophical issues that arise out of interaction between science, technology, society (e.g., religion and science, genetics and society, science and the environment).  

Phil 3607W. Philosophy of Psychology. (4 cr.  
Prereq–One course in philosophy or psychology)  
Major theories of mind including the “invention” of the mind by Descartes, classical empiricism, the impact of Darwinism, Freud’s theories, Gestalt psychology, behaviorism, Chomsky’s rationalism, contemporary functionalism, the computer model.  

Phil 3900H. Honors Seminar. (3 cr. Prereq–Honors  
regis, 6 cr of 3xxx-5xxx philosophy courses)  
Topics of contemporary interest varying from semester to semester.  

Phil 3910W. Major Seminar. (3 cr. Prereq–Phil major or #)  
Development and presentation of the major project.  

Phil 3993. Directed Studies. (1-3 cr; [max 6 cr.]  
Prereq–A,A,D)  
Guided individual reading or study.  

Phil 4003. Medieval Philosophy. (3 cr. Prereq–Grad or upper div undergrad) (student)  
Survey of several major figures of the medieval Christian synthesis (e.g., Augustine, Anselm, Aquinas, Scotus, Ockham).  

Phil 4004W. 19th-Century Philosophy. (3 cr. §4104;  
Grad or upper div undergrad) (student)  
Survey of several major figures from 19th century (e.g., Hegel, Schopenhauer, Mill, Kierkegaard, Marx, Nietzsche).  

Phil 4008W. Survey of Contemporary Philosophy.  
(3 cr. Prereq–3005 or #)  
Survey of major figures in contemporary analytic/phenomenological philosophy (e.g., Dewey, Russell, Wittgenstein, Heidegger, Carnap, de Beauvoir).  

Phil 4009W. Existentialism. (3 cr. §4109. Prereq–3005 or 4004 or #)  
Central themes (e.g., being-in-the-world, freedom, engagement) of several important existentialist thinkers (e.g., Kierkegaard, Jaspers, Sartre, de Beauvoir, Baldwin).
Phil 410W. Selected Ancient Philosopher. (3 cr. Prereq--3001 or #) One or more major writings of selected ancient philosopher (e.g., Plato’s Parmenides, Plato’s Sophist, Aristotle’s Metaphysics).

Phil 4303. Selected Medieval Philosopher. (3 cr. Prereq--3001 or 4003 or #) Major work of selected medieval philosopher (e.g., Aquinas’s Summa contra Gentiles, Books III, Nicholas of Cusa’s On Learned Ignorance).

Phil 440W. Selected Rationalist. (3 cr. Prereq--3005 or #) One or more major writings of selected rationalist (e.g., Descartes’ Principles of Philosophy, Spinoza’s Ethics, Conway’s Principles of the Most Ancient and Modern Philosophy, Leibniz’s Discourse on Metaphysics).

Phil 450W. Selected Empiricist. (3 cr. Prereq--3005 or #) One or more major writings of selected empiricist (e.g., Locke’s Essay Concerning Human Understanding, Berkeley’s Principles of Human Knowledge, Hume’s Treatise of Human Nature).

Phil 4505W. Kant. (3 cr. Prereq--3005 or 4003 or #) Major work (e.g., Critique of Pure Reason).

Phil 470W. Selected 19th- or Early to Middle 20th-Century Philosophy. (3 cr) (max 9 cr). Prereq--One semester history of philosophy.

Major writings of selected 19th- or early to middle 20th-century philosopher (e.g., Schopenhauer’s World as Will and Idea, Thoreau’s Walden, Du Bois’s The Souls of Black Folk, Wittgenstein’s Philosophical Investigations, de Beauvoir’s The Second Sex).

Phil 4805W. Wittgenstein. (3 cr. Prereq--3005 or 4231 or #) Major work (e.g., Philosophical Investigations).

Phil 410W. Metaphysics. (3 cr. Prereq--One semester history of philosophy or #) Philosophical theories concerning nature of reality.

Phil 4104. Nineteenth Century Philosophy. (3 cr. #4004W. Prereq--[grad or upper div undergrad] student) Survey of several major figures from 19th century (e.g., Hegel, Schopenhauer, Mill, Kierkegaard, Marx, Nietzsche).

Phil 4105W. Epistemology. (3 cr. #A-F only. Prereq--1001 or #) Theories of nature/sources of knowledge/evidence.

Phil 4109. Existentialism. (3 cr. #4009W. Prereq--3005 or 4004 or #) Central themes (e.g., being-in-the-world, freedom, engagement) of several important existentialist thinkers (e.g., Kierkegaard, Jaspers, Sartre, de Beauvoir, Baldwin).

Phil 4231W. Philosophy of Language. (3 cr. Prereq--[1001, 2201] or #) Theories of reference, linguistic truth, relation of language/thought, translation/synonymy.

Phil 4310W. History of Moral Theories. (3 cr. Prereq--1003 or #) Issues in western moral philosophy from classical age to present.

Phil 4320W. Intensive Study of a Historical Moral Theory. (3 cr. Prereq--1003 or #) Intensive consideration of an author or theory in the history of moral or political philosophy.

Phil 4321W. Theories of Justice. (3 cr. Prereq--1003 or 1004 or #) Philosophical accounts of concept/principles of justice.

Phil 4324W. Ethics and Education. (3 cr. Prereq--6 cr in [philosophy or education] or #) What constitutes good education, both in terms of educational outcomes and of processes that promote learning? What connections are there between concepts of good education and of good society?

Phil 4325W. Education and Social Change. (4 cr; A-F only) Connections between education, social change. Theories of democratic/popular education, their application through in-depth practicum in community education setting.


Phil 4330W. Contemporary Moral Theories. (3 cr. Prereq--1003 or #) Discusses view that evaluative judgments cannot be based on factual considerations alone, relation of this view to objectivity of ethics.

Phil 4414W. Political Philosophy. (3 cr. Prereq--1004 or #) Survey of historical/contemporary works in political philosophy.

Phil 4501W. Principles of Aesthetics. (3 cr. Prereq--3502 or #) Major work (e.g., Philosophical investigations of art).

Phil 4512W. Philosophy of Religion. (3 cr. Prereq--8 cr in philosophy) Conceptual problems that arise from attempts to provide rational justification for religious belief.

Phil 4605. Space and Time. (3 cr. Prereq--Courses in [philosophy or physics] or #) Problems concerning nature/structure of space, time, and space-time.


Phil 4611W. Philosophy of the Social Sciences. (3 cr. Prereq--9 cr of philosophy or [social science] or #) Criteria for describing/explaining human actions. Problems of objectivity, reduction, freedom.

Phil 4614W. Philosophy of Psychology. (3 cr. Prereq--[3007 or Psy 3051, 5011] or #) Problems/prospects in recent developments in psychology, cognitive science, and philosophy of mind.

Phil 4615W. Minds, Bodies, and Machines. (3 cr. Prereq--One course in philosophy or #) Mind-body problem. Philosophical relevance of cybernetics, artificial intelligence, computer simulation.

Phil 4622W. Philosophy and Feminist Theory. (3 cr. Prereq--8 cr in [philosophy or women’s studies] or #) Could science be a way of knowing? Gender’s influence on scientific/empirical problems and methods. Social role of theorist/theorizing as they relate to politics of feminism.

Phil 4760. Selected Topics in Philosophy. (3 cr. max 9 cr. Prereq--3xxx-5xxx course in phil or #) Philosophical problems of contemporary interest. Topics specified in Class Scheduled.

Phil 4993. Directed Studies. (1-3 cr. max 6 cr. Prereq--A, #) Guided individual reading or study.

Phil 5201. Symbolic Logic I. (4 cr. Prereq--1001 or #) Elements of set theory, including the concepts of enumerability and nonenumerability. Turing machines and recursive functions; the results of Church, Godel, and Tarski and the philosophical significance of those results.

Phil 5211. Modal Logic. (3 cr. Prereq--5201 or #) Axiomatic and semantic treatment of propositional and predicate modal logics; problems of interpreting modal languages.

Phil 5221. Philosophy of Logic. (3 cr. Prereq--5202 or #) Attempts to answer, “What is logic?” Scope of logic. Disputes about alternative logics. Theories concerning logical truth (e.g., conventionalism: view that logical truths are contingent).

Phil 5222. Philosophy of Mathematics. (3 cr. Prereq--5202 or 5xxx math course) Major philosophical questions arising in connection with mathematics: What is mathematics about? How do we know the mathematics we do? What is the relation between mathematics and the natural sciences. Selected readings of leading contributors such as Frege, Dedekind, Russell, Hilbert, Brunner, Godel, Quine.

Phil 5325W. Biomedical Ethics. (3 cr. Prereq--4 for undergraduates) A survey of major topics and issues in biomedical ethics including patients’ rights and duties, informed consent, confidentiality, ethical issues in medical research, the initiation and termination of medical treatment, euthanasia, abortion, and the allocation of medical resources.

Phil 5415. Philosophy of Law. (3 cr. Prereq--1003 or 1004 or 3302 or social science major or #) Analytical accounts of law and legal obligation.

Phil 5606. Philosophy of Quantum Mechanics. (3 cr) Problems of interpretation in quantum mechanics. Two-slit experiment, Schrödinger cat paradox (measurement problem), Einstein-Podolsky-Rosen paradox. Leading approaches to interpretation (Copenhagen, hidden variables, universal wave function) and their connections with philosophical issues.

Phil 5760. Selected Topics in Philosophy. (3 cr. max 9 cr. Prereq--3xxx-5xxx course in phil or #) Philosophical problems of contemporary interest. Topics specified in Class Scheduled.

Phil 5993. Directed Studies. (1-3 cr. max 6 cr. Prereq--A, #) Guided individual reading or study.

Physical Education (PE)

School of Kinesiology

College of Education and Human Development


PE 1007. Beginning Swimming. (1 cr) Introduction to basic aquatic safety, fundamentals of swimming and hydrodynamics. Principles of hydrodynamics and stroke mechanics; five basic strokes; basic rescue techniques with use of pool equipment; hydrotherapy for disabilities and other conditions, opportunities for competitive activities, lifetime enjoyment of aquatics.

PE 1014. Conditioning. (1 cr) Fundamentals of personal fitness. Principles of fitness; health and motor skill components of fitness; principles of training/conditioning programs; nutrition; weight control; common fitness injuries; motivation and consistency in fitness programs; stress management.
PE 1015. Weight Training. (1 cr) Introduction to weight training. Basic aspects of weight training including exercise selection and technique, charting workouts, program design, nutritional considerations, and safety.

PE 1016. Posture and Individual Exercise. (1 cr) Good posture techniques, individual exercises, fitness concepts, and mental techniques. Specific overall body and body and mind techniques to include flexibility exercises, cardiovascular fitness, resistance training, nutrition management, weight control, stress management, and self-thought.

PE 1029. Handball. (1 cr) Hand and eye coordination, footwork in practice and game conditions, and skills and strategies of service and rally for the court sport handball (four-wall version). Novice to intermediate levels of play accommodated.

PE 1031. Sabre Fencing. (1 cr) Basic saber techniques, movement, an overview of fencing as a recreational sport and an Olympic sport, and the history of fencing.

PE 1032. Badminton. (1 cr) Fundamentals including etiquette, terminology, game rules for singles and doubles, footwork, shot selection, and strategy.

PE 1033. Foil Fencing. (1 cr) Fencing fundamentals, including basic foil techniques, movement, a general overview of fencing as a recreational sport and an Olympic sport, and the history of fencing.

PE 1034. Judo. (1 cr) Basic skills for throwing, falling, grappling (matwork), choking, arm and neck techniques; contest jogo from Jiu-Jitsu; fundamental rules and scoring of contests. Videotapes used for technique instruction and contest appreciation.

PE 1035. Karate. (1 cr) Japanese Traditional Shotokan Karate (JTSK) is non-contact—no protective pads or gear are worn. Structural foundation, discipline and control, posture, basic body dynamics, blocking, kicking, punching techniques, as well as basic sparring (kumite) and forms (kata).

PE 1036. Racquetball. (1 cr) Fundamentals of racquetball, including equipment; safety and etiquette; terminology; game rules of singles, doubles, and cutthroat; grips; basic strategies; serves and shots.

PE 1037. Squash Racquets. (1 cr) Entry-level technique, basic equipment, international dimension courts, and fitness.

PE 1038. Beginning Tennis. (1 cr) Fundamental strokes, including forehands, backhands, volleys, lobs, overheads, and serves; introduction to doubles play; terminology, rules, and etiquette.

PE 1041. Cycling. (1 cr) Fundamentals of cycling, including physical fitness associated with aerobic training, stretching, safety, and bike maintenance. Students should provide bicycle in good working condition.

PE 1042. Orienteering. (1 cr) Fundamentals, including navigation of an orienteering course using map and compass; types of orienteering courses; multiple techniques and tactics of orienteering. Course is physically challenging and requires participation in three orienteering meets (Sunday afternoons).

PE 1043. Beginning Horse Riding. (1 cr) Techniques, styles, and communication of English riding. Students will learn riding techniques at a walk, trot, canter, and jumping.

PE 1044. Self-Defense. (1 cr) Physical, psychological, and de-escalation skills for acting in crisis situations. Distance, body language, and tone of voice are addressed. Physical skills include striking, kicking, shifting, blocking, releasing techniques, floor defenses, and applications to armed attackers and multiple attackers.


PE 1048. Bowling. (1 cr) Fundamentals, including stance, approach and delivery, scoring, bowling terminology, and etiquette.

PE 1053. Ice Skating. (1 cr) Basic turns, basic stops, balance techniques, and various other skills from both the forward and backward positions. Equipment, safety issues, ice skating terminology.

PE 1055. Golf. (1 cr) Proper grip, stance, ball address, swing, club selection, psychological management, rules, and etiquette. Basic instruction in analyzing, assisting with, and coaching golf.

PE 1056. Nordic (Cross-Country) Skiing. (1 cr) Introduction to the fundamental techniques of classical and freestyle cross country skiing. Students will be taught through lecture and direct experience on cross country skiing trails.

PE 1057. Beginning Skiing. (1 cr) Introduction to alpine skiing. Students are taught to stop, turn, and use lifts, as well as safety, etiquette, and purchase of equipment. Class held at Highland Hills ski area in Bloomington.

PE 1058. Snowboarding. (1 cr) Prereq—Good general health, injury free; $75 facility fee) Introduction to alpine snowboarding. Using American Teaching System, classes are split into nine skill levels, beginning through advanced. Held at Hyland Ski and Snowboard School in Bloomington.

PE 1059. Track and Field. (1 cr) Introduction to track and field: conditioning and training, events and skills, strategies, track and field knowledge, equipment, facilities, and technology.

PE 1065. Tumbling and Floor Exercise. (1 cr) Basic tumbling skills, including rolls, handstands, cartwheels, extensions, hand springs, and tucks (flips), accompanied by the appropriate spotting techniques.

PE 1067. Basketball. (1 cr) Fundamental skills and rules of basketball, with emphasis on basic court movement and different offensive and defensive strategies.

PE 1072. Soccer. (1 cr) Fundamentals of soccer including sporting behavior both on and off the field, game rules, soccer terminology, participation and competition drills, fundamental soccer skills, practical instruction in strategy.

PE 1073. Softball. (1 cr) Development of basic skills for lifetime involvement.

PE 1074. Beginning Volleyball. (1 cr) Basic skills, team play, rules, officiating, and strategy.

PE 1075. Ice Hockey. (1 cr) Prereq—1053 or equiv or #) Offensive/defensive strategies/techniques, goal tending, scrimmage play. Students need their own equipment.

PE 1107. Intermediate Swimming. (1 cr) Prereq—1007 or equiv; proficient ability to swim 100 meters) Intermediate swimming skills. Fundamentals of swimming and hydrodynamics.


PE 1135. Intermediate Karate. (1 cr) Prereq—1035 or equiv or #) Techniques of Japanese traditional Shotokan Karate taught through Ippon Kumite (one step sparring), San Kumite (three step sparring), and Heian Shodan Kata/Nidan Kata (forms). Testing for orange belt is optional.

PE 1136. Intermediate Racquetball. (1 cr) Prereq—1036 or equiv) Improvement of basic skills and strategies. Format is determined by the number of players and their level of ability.

PE 1138. Intermediate Tennis. (1 cr) Prereq—1018 or equiv or #) Review terminology, rules, etiquette. Improve basic skills. Singles/doubles strategy, competitive play.

PE 1154. Figure Skating. (1 cr) Prereq—1053 or equiv or #) Terminology, rules. Basic moves, jumps, spins. On-/off-ice assignments.

PE 1157. Intermediate Skiing. (1 cr) Prereq—1057 or equiv or #; assessment is made to determine skill level) Developing advanced skills in alpine skiing. Skying safely on more difficult terrain. Class held at Highland Hills ski area in Bloomington.

PE 1165. Intermediate Tumbling. (1 cr) Prereq—1065 or equiv or #) Rolls, handstands, cartwheels, extensions, handsprings, tucks (flips), twisting, and combinations. Skills accompanied by spotting techniques.

PE 1174. Intermediate Volleyball. (1 cr) Prereq—1074 or equiv) Development of a broader understanding of volleyball systems of play, and incorporation of offensive and defensive formations into team play. Fundamental skills will be developed further and more advanced skills will be introduced. Team play, transition, coaching, and officiating.

PE 1205. Scuba and Skin Diving. (1 cr) Prereq—1107 or equiv or #) Diving equipment, physics, physiology, decompression, emergencies, recreational dive planning, oceans, currents and aquatic life, snorkeling/SCUBA equipment usage, buoyancy control, entries, emergencies.

PE 1305. Scuba Stress Rescue and Accident Management. (1 cr; A-F only. Prereq—Open Water SCUBA Certification or higher.) CPR, First Aid certified, (own SCUBA equipment [mask, fins, snorkel, buoyancy compensator, regulator depth pressure gauge, wet suit] or pay $55 rental fee) Continuing education after basic SCUBA certification course. Accident prevention, personal safety, SCUBA rescue, recognizing/reducing diver stress. SCUBA Schools International (SSI) Stress and Rescue certification.

PE 1306. Lifeguard Training. (1 cr) Prereq—Proficiently swim 500 meters, at least 17 yrs old) Upon completion, certifications are obtained in the following categories: American Red Cross Lifeguarding Today and First Aid: CPR for the Professional Rescuer; and Waterfront Lifeguarding.

PE 1411. Water Safety Instructor. (2 cr. Prereq—Proficiency in basic strokes, completion of skill/ written pre tests) or #) Advanced lifesaving techniques, teaching strategies.

PE 1415. Advanced Olympic Lifting and Conditioning. (1 cr; Prereq—[1014, [1015 or equiv]) Olympic/traditional lifts. Emphasizes program design, nutrition, and improving speed.

PE 1720. Special Activities in Physical Education. (1-3 cr [max 9 cr]) Activities or related opportunities not normally available through regular course offerings.

For definitions of course numbers, symbols, and abbreviations, see page 296.
Physical Medicine and Rehabilitation (PMed)

Department of Physical Medicine and Rehabilitation

Medical School

PMed 1002. Orientation to Physical Therapy. (1 cr; S-N only)
Introduction to the profession of physical therapy through lectures, discussions, patient presentations, clinic visit, videotapes, and exposure to treatment equipment.

PMed 1003. Orientation to Occupational Therapy. (1 cr; S-N only)
Survey of the profession through lectures, films, demonstrations, and tours. For students investigating the field of occupational therapy.

PMed 1005. Orientation to the Health Sciences. (1 cr [max 2 cr]; S-N only)
Health sciences majors/professions. Students assess their own interests, values, and abilities as they integrate/process information to move toward a decision regarding major/career.

PMed 5058. Anatomy for Physical Therapy. (5 cr; A-F only)
Study of gross human anatomy, and surface anatomy, for the practice of physical therapy. Cadaver dissection of extremities, head, neck, back, abdomen, thoracic, and pelvic regions. Correlation to clinical conditions. Lecture, laboratory.

PMed 5100. Seminar I: Overview of Rehabilitation Science. (1 cr; A-F only Prereq–#)
History and future of physical rehabilitation, health-care models, epidemiology of physical disorders, research on treatment outcomes, measurement issues, clinical evaluation of traditional vs. nontraditional rehabilitation strategies.

PMed 5121. Issues in Mental Health. (1 cr; S-N only. Prereq–One course gen psych, one course abnorm psych)
Psychiatric/neuropsychological assessment/treatment. Issues related to medical/community management and to roles of OT/PT with respect to clients with mental health needs. Interaction between physical/mental health and disability.

PMed 5122. Descriptive Neurology. (1 cr [max 2 cr]; A-F only Prereq–OT or PT or #)
Relates neuroanatomical/neuropsychological principles to neurological conditions commonly seen in occupational/physical therapy practice.

PMed 5135. Advanced Biomechanics I: Kinematics. (2 cr; A-F only Prereq–#)
How to describe/move movement. Emphasizes three-dimensional techniques. Lecture, laboratory, seminar discussion of basic and applied biomechanics, pathokinesiology, and rehabilitation literature. Classes held with S133 registrants. Assignments vary for those registered at different levels.

PMed 5161. Theory of Physical Medicine and Rehabilitation Applied to Medical Sciences. (3 cr [max 3 cr]; A-F only Prereq–Regis OT or PT student or #)
Clinical science lectures focusing on diagnostic procedures and medical, surgical, and rehabilitation management of patient problems in orthopedics, surgery, pediatrics, dermatology, medicine, cancer, and speech. Includes correlation to current practice and presentation of patients.

PMed 5182. Functional Neuroanatomy/Neurophysiology. (4 cr; A-F only Prereq–Regis OT or PT student or #)
Neuroanatomical structures as functional systems and basic neurophysiologic concepts with emphasis on applications for understanding and treating physical dysfunctions.

PMed 5213. Clinical Practice of Physical Therapy. (2 cr; A-F only)
First in series of clinical education courses.

PMed 5215. Clinical Practice of Physical Therapy I. (1 cr; S-N only Prereq–Regis PT student)
First of three-course sequence. Emphasizes sensitivity to needs of patients, families, and health-care coworkers. Patient handling techniques, communication skills, awareness of cultural differences, psychological aspect of disability, and use of community resources.

PMed 5216. Clinical Practice of Physical Therapy II. (1 cr; S-N only Prereq–Regis PT student)
Second of three-course sequence. Emphasizes sensitivity to needs of patients, families, and health-care coworkers. Patient handling techniques, communication skills, awareness of cultural differences, psychological aspect of disability, and use of community resources.

PMed 5217. Clinical Practice of Physical Therapy III. (1 cr; S-N only Prereq–Regis PT student)
Sensitivity to needs of patients, families, and health-care coworkers. Patient handling techniques, communication skills, awareness of cultural differences, psychological aspect of disability, and use of community resources.

PMed 5221. Therapeutic Procedures. (3 cr; A-F only Prereq–Regis PT student)
Theory and techniques, therapeutic massage, ultraviolet radiation, medical and athletic bandaging, asepsis and isolation, thermotherapy, hydrotherapy, positive pressure devices, volumetric measurements.

PMed 5223. Electrotherapy and Electrophysiological Testing. (2 cr; A-F only Prereq–Regis PT student)
Theory and technique of movement analysis and treatment using electrophysiological testing and therapeutic devices.

PMed 5231. Biomechanics. (3 cr; A-F only Prereq–Regis PT student)
Forces and structures internal and external to the body responsible for both normal and abnormal human movement, including analysis techniques and independent assignments. Muscle function, palpation, posture, and gait of normal individuals with analysis to detect deviation from the norm.

PMed 5240. Human Growth and Development. (2 cr; A-F only Prereq–Regis PT student)
Development process throughout the life span, including physical, social, cognitive, and personality development and the way they may be influenced by genetic and environmental factors.

PMed 5255. Clinical Internship I. (3 cr; S-N only Prereq–Regis PT student)
Five-week, full-time internship. Select and perform physical therapy evaluation techniques, interpret results, define rationale for physical therapy service, develop a care plan, implement treatment program, and communicate patient/client care process as a physical therapy professional.

PMed 5260. Professional Issues in Physical Therapy. (3 cr; A-F only Prereq–Regis PT student or #)
Current professional issues, dilemmas, and trends in health care. Evaluation and treatment skills in physical therapy specialty areas.

PMed 5281. Therapeutic Exercise I. (3 cr; A-F only Prereq–Regis PT student)
Principles of skeletal muscle, connective tissue, and collagen physiology, physics, and neurology as basis for therapeutic exercise. Exercise physiology and related microanatomy of the musculoskeletal and respiratory systems as they relate to rehabilitation problems. Tissue response to treatment for loss of mobility and endurance and strength training.

PMed 5282. Therapeutic Exercise II. (3 cr; A-F only Prereq–Regis PT student)
Principles of neurophysiology, neurology, motor control, and motor learning as basis for therapeutic intervention in motor dysfunction.
Course Descriptions

Physics (Phys)

School of Physics and Astronomy

Institute of Technology


Phys 1011. Physical World. (3 cr; A-F only. Prereq—One yr high school algebra)

Phys 1012. Elementary Physics. (4 cr; A-F only. Prereq—One yr high school algebra, Internet connectivity) Topics represented in context of real world situations. Motion, forces, momentum, energy, heat, vibrations, sound, light, electricity, magnetism. Emphasizes development of logical reasoning skills. Lab.

Phys 1101W. Introductory College Physics I. (4 cr. Prereq—High school algebra, plane geometry, trigonometry; primarily for students interested in technical areas) Fundamental principles of physics in the context of everyday world. Use of kinematics/dynamics principles and quantitative/qualitative problem solving techniques to understand natural phenomena. Lecture, recitation, lab.

Phys 1102W. Introductory College Physics II. (4 cr. Prereq—1101; primarily for students interested in technical areas) Fundamental principles of physics in the context of everyday world. Use of conservation principles and quantitative/qualitative problem solving techniques to understand natural phenomena. Lecture, recitation, lab.


Phys 1302W. Introductory Physics for Science and Engineering II. (4 cr §41402. Prereq—1301, Math 1272 or Math 1372 or Math 1572) Use of fundamental principles to solve quantitative problems. Motion, forces, conservation principles, fields, structure of material. Applications to electromagnetic phenomena.

Phys 1401V. Honors Physics I. (4 cr. §S1301. Prereq—Selection for IT honors or consent of IT honors office) Comprehensive calculus-level general physics course emphasizing the use of fundamental principles to solve quantitative problems. Description of motion, forces, conservation principles, and the structure of matter with applications to mechanical systems.

Phys 1402V. Honors Physics II. (4 cr. §S1302. Prereq—Selection for IT honors or consent of IT honors office) Second semester of comprehensive calculus-level general physics course emphasizing the use of fundamental principles to solve quantitative problems. Description of motion, forces, conservation principles, fields, and the structure of matter with applications to electromagnetic phenomena.

Phys 1901. Freshman Seminar: Environment. (1-3 cr; A-F only. Prereq—Fr with no more than 24 cr) Topics vary. See Class Schedule.

Phys 1905. Freshman Seminar. (1-3 cr; A-F only. Prereq—Fr with no more than 24 cr) Topics vary. See Class Schedule.

Phys 1910W. Freshman Seminar: Writing Intensive. (1-3 cr; A-F only. Prereq—Fr with no more than 24 cr) Topics vary. See Class Schedule.

Phys 2303. Physics of Matter. (4 cr. §5201, §5202. Prereq—1302, Math 1272 or Math 1372 or Math 1572) Use of fundamental principles to solve quantitative problems. Structure of matter. Applications to 20th-century physics such as Bohr atom and models of the hydrogen atom, classical/quantum mechanical waves, molecules, solid state, nuclear physics.

Phys 2311. Modern Physics. (4 cr. Prereq—[1302 or 1402], Chem 1022, Math 2433) Broad overview of physical concepts developed in the twentieth century. Special relativity, wave-particle duality, Schrödinger equation, Bohr atom, hydrogen atom in wave mechanics, many-electron atoms, X-rays, nuclear structure, radioactivity, nuclear reactions, statistical physics.

Phys 2403H. Honors Physics III. (4 cr. §52303. Prereq—Selection for IT honors or consent of IT honors office) Third semester of comprehensive calculus-level general physics emphasizing the use of fundamental principles to solve quantitative problems. Applications to 20th-century physics such as classical and quantum mechanical waves, optics, special relativity, and the atomic structure of materials.

Phys 2503. Modern Physics Principles. (4 cr. §54203V. Prereq—1302W, Math 1272 or Math 1372 or Math 1572) Use of fundamental principles to solve quantitative problems in wave mechanics. Statistical theory from probability to thermodynamics. Applications to matter and to electromagnetic waves, optics, and special relativity.

Phys 2601. Quantum Physics. (4 cr. Prereq—2403H or 2503 or §7, Math 2263 or Math 2373 or Math 3571) Introduction to quantum mechanics. Applications to atomic, molecular, condensed-matter, nuclear, elementary-particle, and statistical physics. Associated lab is 2605.

Phys 2605. Quantum Physics Laboratory. (3 cr. Prereq—2601) Laboratory experiments in atomic, solid state, and nuclear physics offered in conjunction with 2601.

Phys 3071W. Laboratory-Based Physics for Teachers. (4 cr. Prereq—College algebra) Laboratory-based introductory physics designed for students intending to be education majors. Topics selected to apply to elementary school curriculum include the earth's motion, properties of matter, heat and temperature, kinematics, and electric current.

Phys 3940H. Junior Honors Seminar. (1 cr. Prereq—Upper div honors) Designed to prepare students for senior honors thesis projects and provide guidance in choice of future careers.
Phys 3993. Directed Studies. (1-5 cr [max 10 cr].
Prereq–A,∆)
Directed study in Physics in areas arranged by the student and a faculty member.

Phys 3994. Directed Research. (1-5 cr [max 10 cr],
Prereq–A,∆)
Independent, directed study in physics in areas arranged by the student and a faculty member.

Phys 4001. Analytical Mechanics. (4 cr. Prereq–2601,
Math 2263 or Math 2374 or Math 3574):
Analytic Newtonian mechanics. Mathematics beyond prerequisites developed as required.

Phys 4002. Electricity and Magnetism. (4 cr.
Prereq–4001)
Classical theory of electromagnetic fields using vector algebra and vector calculus.

Prereq–2605 or equiv lab experience or #)
Contemporary experimental techniques. Introduction to modern analog and digital electronics from an experimental viewpoint. Use of computers for data acquisition and experimental control. Statistics of data analysis.

Phys 4052W. Methods of Experimental Physics II. (5 cr.
Prereq–4051)
Second semester of laboratory sequence. Contemporary experimental techniques illustrated by experiments with data analysis. Students design and execute an experimental project. Lectures on specialized topics of professional concern.

Phys 4071. Concepts in Physics. (3 cr. Prereq–2201,
2303)
Overview of physics with emphasis on 20th-century developments. Primarily for secondary teachers and science majors wishing to understand the conceptual connections within physics.

Phys 4101. Quantum Mechanics. (4 cr. Prereq–2601)
Mathematical techniques of quantum mechanics. Schrödinger Equation and simple applications, general structure of wave mechanics, operator methods, perturbation theory, radiation from atoms.

Prereq–1111)

Phys 4121. History of 20th-Century Physics. (3 cr.
Prereq–4121)
Contemporary and historical developments in 20th-century physics (birth of modern physics, special theory of relativity, old and new quantum theories, nuclear physics to WW II) within the context of concurrent educational, institutional, and political developments in Europe and the United States.

Phys 4201. Statistical and Thermal Physics. (3 cr.
Prereq–2601)
Principles of thermodynamics and statistical mechanics. Selected applications such as kinetic theory, transport theory, and phase transitions.

Phys 4211. Introduction to Solid-State Physics. (3 cr.
Prereq–4101, 4201)
A modern presentation of the properties of solids. Topics include vibrational and electronic properties of solids; diffraction of waves in solids and electron band structure. Other possible topics include optical properties, magnetic phenomena, and superconductivity.

Phys 4221. Magnetism: Physics, Geophysics, and Engineering. (2 cr. 5 Geo 4221. Prereq–1302 or 1402)
Fundamentals of magnetism including elementary statistical mechanics, rock magnetism, and micromagnetic modeling. Important applications of magnetism in geophysics, biomagnetism, magnetic sensors, and recording will be introduced.

Phys 4303. Waves, Optics, and Relativity. (3 cr.
Prereq–4001, 4002)
Further topics in analytical mechanics, electricity and magnetism including mechanical and electromagnetic wave phenomena, physical and geometrical optics, and relativistic dynamics of particles and fields.

Phys 4501. Experimental Project. (1-5 cr.
Prereq–4052, #)
Research project in physics area of current interest. Project must be approved by faculty coordinator before registration.

Phys 4511. Introduction to Nuclear and Particle Physics. (3 cr. Prereq–4001)
Fundamental particles and Standard Model. Symmetries/quarks, models of nuclei, interactions between particles/nuclei, tests of conservation laws, fission/fusion.

Phys 4611. Introduction to Space Physics. (3 cr.
Prereq–2601)
Astrophysics of energetic particles in space, including cosmic rays and those of solar origin. Detection/identification. Interactions with matter/ magnetic fields in space. Acceleration, modulation, and propagation of energetic particles.

Phys 4621. Introduction to Plasma Physics. (3 cr.
Prereq–4001, 4002)
Magnetohydrodynamics and properties of collisionless plasmas with applications to the magnetic field of the earth and sun, and to plasma confinement. Transport phenomena and effects of collisions.

Phys 4711. Introduction to Optics. (3 cr. Prereq–4002)
Modern theoretical and experimental optics broadly defined to include, for example, radio astronomy and particle accelerators. Matrix methods in geometrical optics including charged particle opticalics detectors and noise; phenomena in intense coherent radiation including nonlinear effects.

Phys 4911. Introduction to Biopolymer Physics. (3 cr.
Prereq–2303, 2403H, 2305) or Chem 3501 or #)
Introduction to biophysical and soft condensed matter physics. Emphasizes physical ideas in experimental/theoretical understanding of biological/synthetic macromolecules/materials.

Phys 4940H. Senior Honors Seminar. (1 cr. [max 2 cr];
5-N only. Prereq–Upper div honors, #)
A seminar for upper division physics majors in the honors program.

or equiv)

Phys 5002. Quantum Mechanics II. (4 cr. Prereq–5001
or equiv)
Symmetry in quantum mechanics, space-time symmetries and the rotation group, Clebsch-Gordan coefficients and the Wigner-Eckart theorem. Scattering theory. Method of second quantization with elementary applications. Relativistic wave equations including Dirac equation.

or #)
Classical mechanics: Lagrangian and Hamiltonian mechanics, orbital dynamics, rigid body motion, special relativity.

Phys 5012. Classical Physics II. (4 cr. Prereq–5011 or #)
Classical electromagnetism: electrostatics, magnetostatics, Maxwell’s equations, electromagnetic waves, radiation, interaction of charged particles with matter.

Phys 5022. Relativity, Cosmology, and the Universe. (4 cr. Prereq 5022. Prereq–2601 or #)

Phys 5041. Analytical and Numerical Methods of Physics I. (4 cr. Prereq–Grad or #)
Survey of mathematical techniques, both analytic and numerical, needed for physics. Application to physical problems.

Phys 5042. Analytical and Numerical Methods of Physics II. (4 cr. Prereq–5041 or #)
Survey of mathematical techniques, both analytic and numerical, needed for physics. Application to physical problems.

Phys 5071. Physics for High School Teachers: Experimental Foundations and Historical Perspectives. (3 cr. Prereq–Gen physics, #; no cr for physics grad or grad physics minor)
In-depth examination of a conceptual theme in physics, its experimental foundations and historical perspectives. Kinematics and dynamics from Aristotle through Einstein; nature of charge and light; energy and thermodynamics; electricity, magnetism, and quantized fields; structure of matter.

Phys 5401. Physiological Physics. (4 cr. Prereq–1301 or 1401)
Musculoskeletal system, circulatory system/ membrane transport, biological control systems, propagation/action potential in nervous system, biomagnetism, electromagnetism at cellular level.

Phys 5402. Radiological Physics. (4 cr. Prereq–1302 or 1402)
Signal analysis, medical imaging, medical X-rays, tomography, radiation therapy, nuclear medicine, MRI, and similar topics.

Phys 5701. Solid-State Physics for Engineers and Scientists. (4 cr. Prereq–Grad or advanced undergrad in physics or engineering or the sciences)
Crystal structure and binding; diffraction; phonons; thermal and dielectric properties of insulators; free electron band; structure; semiconductors.

Phys 5702. Solid State Physics for Engineers and Scientists. (4 cr. Prereq–5701 or #)
Diamagnetism and paramagnetism; ferromagnetism and antiferromagnetism; lasers; superconductivity; surface properties; ferroelectricity.

Phys 5950. Colloquium Seminar. (1 cr. [max 2 cr];
5-N only. Prereq–Grad or upper div phys major)
Introduction to the research activities of the School of Physics and Astronomy.

Phys 5993. Directed Studies. (1-5 cr [max 15 cr],
Prereq–A,≤)
Independent, directed study in physics in areas arranged by the student and a faculty member.

Phys 5994. Directed Research. (1-5 cr [max 15 cr],
Prereq–A,≤)
Problems, experimental or theoretical, of special interest to students. Written reports.

Physiology (Phsl)
Department of Physiology
Medical School
Phsl 1001. Human Physiology. (3 cr. Prereq–High school chem, high school bio)
How major organ systems function (nerve, muscle, circulation, respiration, endocrine, renal, gastrointestinal, temperature regulation and energy metabolism). Function in terms of mechanism. Ideas presented in terms of scientific concepts and methods, although a scientific background is not assumed.

Phsl 3051. Human Physiology. (4 cr. Prereq–1 yr college bio, 1 yr college chem)
For pre-allied health sciences majors. How major organ systems function (nerve, muscle, circulation, respiration, endocrine, renal, gastrointestinal, temperature regulation and energy metabolism). Fall offering emphasizes independent learning using e-mail extensively for information exchange between students and faculty. One-hour lecture, two-hour lab

Phsl 3071W. Principles of Physiology for Majors. (5 cr; A-F only. Prereq–Physiology major, 1 yr college chem and physics and math through integral calculus) Human physiology with emphasis on quantitative aspects. Organ systems (circulation, respiration, gastrointestinal, renal, endocrine, muscle, peripheral and central nervous systems), cellular transport processes, and scaling in biology. Papers on current topics of interest based on published laboratory research required.

Phsl 3095. Problems in Physiology. (1-5 cr max 20 cr.) Prereq–1college physiology, # Individualized study in physiology. Students address a selected problem in physiology through library or lab research, supervised by physiology faculty.

Phsl 3101. Introduction to Neuroscience I: From Molecules to Behavior. (3 cr. A-F only. Prereq–Biological sciences 1 or Stats 1; 8Bio 3101, MNSc 3101. Prereq—Bio/Bioc 3021 or Bio/Chem 4331, Biol 4004 or 4004) Basic principles of cellular and molecular neurobiology and behavior. Lactates, experiments, workshops, anatomical dissections. Intense, one-week course.

Phsl 5510. Advanced Cardiac Physiology and Anatomy. (2-3 cr. Prereq–#) Fundamental concepts, advanced topics related to clinical and biomedical cardiac physiology. Lectures, laboratories, demonstrations. Intense, one-week course.

Phsl 5511. Advanced Neuromuscular Junction Physiology. (2-3 cr. Prereq–#) Fundamental concepts and advanced topics related to clinical and biomedical aspects of neuromuscular junction physiology. Lectures, laboratories, demonstrations. Intense, one-week course.

Phsl 5520. Advanced Pulmonary Mechanics: Physiology and Pathophysiology. (2-3 cr. Prereq–#) Fundamental concepts and advanced topics related to mechanical aspects of pulmonary function (e.g., elastic recoil, airway resistance). Lectures, laboratories, demonstrations. Intense, one-week course.

Phsl 5701. Physiology Laboratory. (1-2 cr max 2 cr; A-F only. Prereq–#) Experiments in physiology. Emphasizes quantitative aspects, including analysis of organ systems.

Plant Biology (PBio)

Department of Plant Biology
College of Biological Sciences

PBio 1212. Plants and Society. (3 cr. Prereq—for majors and nonmajors) Roles that plants play and have played in human biological and cultural development.

PBio 4321. Taxonomy of Minnesota Flora. (3 cr. Prereq—Bio/Bioc 3021 or Bio/Chem 4331) Identification of common vascular plants of Minnesota and surrounding region; distinguishing characteristics of local taxa; descriptive terminology; use of manuals of florals. Includes lab and field trips.

PBio 4404. Developmental Plant Anatomy. (3 cr. Prereq—Bio/Bioc 3021 or Bio/Chem 4331) Introduction to the microscopic structure and development of plants at the cell, tissue, and organ level. Emphasis on relationships between anatomy and the ontogeny, phylogeny, and ecology of seed plants with some reference to lower vascular plants.


PBio 4593W. Directed Research: Writing Intensive. (1-7 cr max 7 cr; S-N only. Prereq—#) Laboratory or field investigation of selected areas of research, including written report.

PBio 4801. Plains and Boréal Flora. (4 cr; A-F only. Prereq—Taxonomy course, #) Survey of state summer flowering plants and ferns with particular reference to local flora. Identification of important plant families using technical keys, and field recognition of common species and habitat preferences; collecting methods, literature, and taxonomic methods.


PBio 4993. Directed Studies. (1-7 cr max 7 cr; S-N only. Prereq—#) Individual study on selected topics or problems. Emphasizes selected readings, use of scientific literature.

PBio 4994. Directed Research. (1-7 cr max 7 cr; S-N only. Prereq—#) Laboratory or field investigation of selected areas of research.


PBio 5102. Plant Genomics. (3 cr. Prereq—Intro course in genetics, intro course in biochemistry) Introduction to genomics. Emphasizes plants and relevant model organisms. DNA marker/sequencing technology, comparative genomics, whole genome sequencing, DNA chips/microarrays, EST libraries and SAGE analysis, gene-knockout systems, genome databases, sequence comparison/clustering algorithms, visualization tools.


PBio 5141. Plant Cell and Molecular Biology. (3 cr. Prereq—Bio/Bioc 2022 or Bio/Chem 3002 or Bio/Chem 4331) Aspects of recombinant DNA technology and other technologies in cell and molecular biology. Appropriate for those without extensive background in these areas but who wish to understand the potential uses of current cell and molecular technologies in the plant sciences.


PBio 5540. Discussions in Plant Molecular Biology. (2 cr max 4 cr. Prereq—PBio 4141. Prereq—Bio/Bioc 3002, Bio/Chem 4503 or GGB 5034 or GCB 5034) Selected topics in plant molecular biology for students with a strong interest in the subject. Classical and recent papers that have led to current understanding of transposable elements, genomic structure and function, mechanisms of hormone action and gene regulation.

PBio 5960. Special Topics. (1-3 cr max 6 cr.) Prereq—Bio/Bioc 3002 or Bio/Chem 3007) In-depth treatment of specialized topics in plant biology.
Plant Pathology (PlPa)

Department of Plant Pathology
College of Agricultural, Food and Environmental Sciences

PlPa 1001. Microbes, Plants, and People: The Social and Economic Impact of Plant Disease. (3 cr)
The positive and negative effects of microorganisms on plants and their ultimate effects on human history, economics, and society.

PlPa 1002. Plant Diseases and Your Garden. (2 cr)
Characteristics and causes of diseases that can affect the growth of plants with emphasis on flowers, small fruits, and vegetables. In-depth study of 18 different plant diseases that may appear in your garden, why they occur, and how to avoid them.

PlPa 1003. All About Mushrooms. (2 cr)
Recognition of edible, poisonous, common, or conspicuous forms of mushrooms as well as mushroom folklore, art and recipes, and ecology.

PlPa 1004. Diseases of Turfgrasses. (2 cr; A-F only)
Turfgrass diseases, insect/nematode problems, role of turfgrass ecology in disease development. Tools to diagnose/provide recommended strategies for turfgrass diseases. Safe effective pesticide strategies, integrated pest management plans for management.

PlPa 2001. Introductory Plant Pathology for Horticulturists. (3 cr; Prereq–Biol 1009 or equiv)
Pathogens that cause plant disease; symptoms resulting when susceptible plants and causal agents interact, roles the environment and physio-chemical stresses have on incidence and severity of plant disease, and examples of how techniques of plant disease control may be integrated.

PlPa 2002. Management and Control of Field Crop Diseases. (3 cr; Biol 1009 or equiv)
Dynamics of plant pathogens, their control in plant disease. Crops discussed (i.e., small grain, corn, soybeans, potatoes, sugar beets, dry beans) are found in common rotations practiced in Minnesota.

PlPa 3001. Plant Disease Biology and Management. (1 cr; Prereq–Biol 1009 or equiv)
Introduction to organisms that cause plant diseases. Symptoms of plant diseases, economic losses due to plant diseases, and chemical and biological strategies for managing plant diseases will be discussed.

PlPa 3002. Air Pollution, People, and Plants: The Science and the Ethics. (3 cr; Prereq–Chem 201, 1022; Biol 1009 or equiv)
History of air pollution, its sources and types; global climate change; air pollution effects on human health, crops and forests; air pollution control and international perspective; risk perception and assessment; public ethics and decision making.

PlPa 3003. Diseases of Forest and Shade Trees. (3 cr)
Diseases of trees in urban and forested areas. Biology, ecology, and control of tree diseases. Labs provide experience identifying disease agents and integrated control procedures.

PlPa 3090. Research in Plant Pathology. (2-4 cr)
Assignment of special problems to undergraduates desiring opportunity for independent research in plant pathology.

PlPa 4000. Plant Pathology Practicum. (1 cr; max 5 cr; Prereq–2000 or 2002, environmental hort majors should be 1 or sr)
Analysis and identification of plant disease problems facing horticultural or agricultural enterprises. Develop procedures and practices that have the potential to improve existing programs for plant disease management in those businesses.

PlPa 4096. Professional Experience Program: Internship. (1-3 cr; max 6 cr; S-N only. Prereq–COAFES undergrad, A complete internship contract available in COAFES Career Services before registering)
Supervised practicum with professional experience in plant pathology and related industries including the Plant Disease and “Diag–U” clinics. Evaluative reports and consultations with faculty advisers and employers.

PlPa 5003. Diseases of Forest and Shade Trees. (3 cr)
Diseases of trees in urban and forested areas. Biology, ecology, and control of tree diseases. Identifying diseases, pathology, integrated control procedures, Laboratory.

PlPa 5090. Issues in Plant Pathology. (2-4 cr)
See Class Schedule or department for current offerings.

PlPa 5102. Epidemiology and Genetics of Host-Parasite Interactions. (3 cr; A-F only. Prereq—[5201 or equiv], GC 3022)

PlPa 5103. Physiological and Molecular Plant-Microbe Interactions. (3 cr)
Genetics, physiology, molecular biology of plant-microbe interactions. Communication between plant microbes, signal transduction, control of gene expression, symbiosis/parasitism, plant host response mechanisms, plant disease physiology.

PlPa 5201. Biology of Plant Diseases. (4 cr; Prereq–Biol 1009 or equiv)
Principles and concepts of plant disease caused by selected viruses, bacteria, fungi, nematodes, and environmental factors. Pathogen biology, interaction of pathogens and the environment; epidemiology and control measures appropriate to plant disease.

PlPa 5202. Field Plant Pathology. (2 cr; Prereq—#)
Characteristics of a variety of plant diseases. Field trips to observe symptoms and effects of diseases, and to learn about prevention and control of diseases in field, forest, golf course, greenhouse, nursery, orchard, and urban environments.

PlPa 5203. Biology and Ecology of Fungi. (3 cr; Prereq–Biol 1009 or equiv)
Major groups of fungi, their roles in ecosystems and human society, environmental and nutritional needs, and modes of dissemination and survival. Representative species of fungi observed and manipulated.

PlPa 5204. Plant Disease Management. (3 cr; A-F only. Prereq–3001 or 3002)

PlPa 5301. Plant Genomics. (3 cr; Prereq–Intro course in genetics or #)
Introduction to genomics. Emphasizes plants and relevant model organisms. DNA marker/sequencing, gene-knockout systems, genome databases, sequence comparison/clustering algorithms, visualization tools.

PlPa 5999. Special Workshop in Plant Pathology. (1-4 cr)
Workshops on a variety of topics in plant pathology offered at locations other than the Twin Cities campus. See Class Schedule or department for current offerings.

Polish (Plsh)

Institute of Linguistics, ESL, and Slavic Languages and Literatures

College of Liberal Arts

Plsh 1101. Beginning Polish. (5 cr)
Develop basic proficiency in listening, speaking, reading, and writing and become acquainted with Polish culture. First of four courses designed to satisfy CLA language graduation requirement.

Plsh 1102. Beginning Polish. (5 cr; Prereq–1101 or equiv)
Develop basic proficiency in listening, speaking, reading and writing to acquaint students with Polish culture. Second of four courses designed to satisfy CLA language graduation requirement.

Plsh 3001. Intermediate Polish. (5 cr; Prereq–1102 or equiv)
Conversation, composition, advanced grammar, translation, and readings in appropriate literature. Third of four courses designed to satisfy CLA language graduation requirement.

Plsh 3002. Intermediate Polish. (5 cr; Prereq–3001 or equiv)
Conversation, composition, advanced grammar, translation, and readings in appropriate literature. Fourth in a sequence of courses designed to satisfy CLA language graduation requirement.

Plsh 3601. Survey of Polish Literature: Baroque through Romanticism. (3 cr)
Reading and analysis of major works of Polish literature from Baroque through Romanticism.

Plsh 3602. Survey of Polish Literature: 1863 to the Present. (3 cr)
Reading and analysis of major works of Polish literature from 1863 to the present.

Plsh 5900. Topics. (1-4 cr)
Topics specified in Class Schedule.

Plsh 5993. Directed Readings. (1-3 cr)
Guided individual reading or study in Polish language, literature, and culture.

Political Science (Pol)

Department of Political Science
College of Liberal Arts

Pol 1001. American Democracy in a Changing World. (4 cr; S 1002)
Introduction to politics and government in the United States. Constitutional origins and development, major institutions, parties, interest groups, elections, participation, public opinion. Ways of explaining politics and the nature of political science. Recent trends emphasized.


Pol 1015. Mass Politics in a Media Age. (3 cr)
In a world of sound bites, soft news, and ubiquitous information/images, do we make rational voting decisions? Are we politically engaged? Do politicians, the media, and political institutions promote or obstruct our efforts to be good citizens? What does responsible citizenship entail? What can be done to enhance citizenship?

Pol 1019. Indigenous Peoples: A Global Perspective. (3 cr; A-F only; §4001 1002)
Colonial experiences of selected indigenous peoples in Americas, Eurasia, Pacific Rim.
Course Descriptions

Pol 1025. Global Politics. (4 cr)
Study of international relations and issues in contemporary world politics. Forms of state interaction from violent conflict to cooperation and integration; activities of international institutions; transnational relations involving non-state actors such as international businesses, human rights networks, and environmental movements.

Pol 1026. We and They: U.S. Foreign Policy. (4 cr)
Contemporary foreign policy issues; how the United States makes foreign policy in a global era; historical background. How two regions (such as the Middle East and China) affect and are affected by U.S. policy.

Pol 1054. Repression and Democracy Around the World. (4 cr)
Introduction to political life in all its worldwide variety. Focus on repression, democracy, rights, corruption, human rights, political movements, etc. Guest lectures by political science professors who are experts on different parts of the world. Non-majors welcome.

Pol 1065. Government and Medicine. (3 cr)
Structure of American government as background for competing models of health policy making. Political struggles over government policy as means for peacefully reconciling competing interests, demands, and values. Tension between (a) technocratic assumption that experts are best equipped to make national policy and (b) democratic principle/practice of popular consent and wide political participation/conflict.

Pol 1201. Political Ideas and Ideologies. (4 cr)
Analysis of key concepts and ideas (e.g., freedom, equality, democracy) as they are constructed by major theories and ideologies (liberalism, conservatism, socialism, etc.).

Pol 1902. Topics: Freshman Seminar. (3 cr; A-F only, Prereq–Fr or max 36 cr)
Topics specified in Class Schedule.

Pol 1903. Freshman Seminar. (3 cr; A-F only, Prereq–Fr or max 36 cr)
Topics specified in Class Schedule.

Pol 1908W. Topics: Freshman Seminar. (3 cr; A-F only, Prereq–Fr or no more than 36 cr)
Topics specified in Class Schedule.

Pol 1909W. Topics: Freshman Seminar. (3 cr; A-F only, Prereq–Fr or max 36 cr)
Topics specified in Class Schedule.

Introduction to major concepts and issues in political science including political participation, policy making; justice, legitimacy, political development, and types of political systems. Explore empirical and normative problems and compare among major countries.

Pol 3070. Faculty-Supervised Individual Field Work. (1-12 cr; max 12 cr; A-F only, Prereq–¶, A)
Faculty-supervised research related to work in political or governmental organizations.

Pol 3080. Faculty-Supervised Individual Internships. (1-12 cr; A-F only, Prereq–¶, A)
Internship with government or community organizations arranged by the department and awarded competitively each spring semester.

Pol 3085. Quantitative Analysis in Political Science. (4 cr; A-F only, Prereq–¶ or social sciences or ¶)
Introduction to empirical research techniques, or how one tests a political hypothesis using data. Topics such as setting up a research question in political science, proper research design, and some basic techniques of data analysis.

Pol 3109H. Honors Course: Researching Politics. (3 cr; A-F only, max 3109, Prereq–¶, A, honors)
Give students a start on their honor theses. Research design, methods of data collection/analysis, strategies for scholarly writing. Meets each spring.

Pol 3110H. Honors Thesis Credits. (1-4 cr; max 4 cr; A-F only, max 3110, Prereq–¶, A, honors)
Individual research/writing of departmental honors thesis.

Pol 3210. Practicum. (1-3 cr [max 6 cr]; Prereq–¶, A)
Offers different kinds of out-of-class opportunities to complement the requirements of majors, minors, and types of a parent course in political science. Opportunities vary according to demands of the parent course.

Pol 3215. Current Controversies and Problems in Politics. (3 cr)
Exploration and examination of contemporary controversies in American politics (e.g., affirmative action, health care, abortion, euthanasia) as they affect questions of citizenship and cultural diversity.

Pol 3225. American Political Thought. (3 cr)
Puritans, American Revolution, Constitution, pro- and anti-slavery arguments, civil war and reconstruction, industrialization, westward expansion, Native Americans, immigration, populism, socialism, social Darwinism, women’s suffrage, red scares, Great Depression, United States as world power, free speech, pluralism and multiculturalism.

Pol 3235W. Democracy and Citizenship. (3-4 cr; Prereq–1201 recommended)
Surveys models of democracy based on individual rights; pluralism; civic republicanism; community activism. Examines dilemmas of democratic government and citizenship in a race, class, and gender-stratified society; explores its possibilities in a changing world.

Pol 3251. Greeks, Romans, and Christians: Ancient and Medieval Political Thought. (3-4 cr; §5251)
Politics and ethics in Greece, Rome, Christendom; Thucydides, Socrates, Plato, Aristotle, Cicero, Augustine, Aquinas, Marsilius.

Pol 3252. Renaissance, Reformation, and Revolution: Early Modern Political Thought. (3-4 cr; §5252)
Thinkers, themes, and discourses from the Renaissance to the French Revolution. Renaissance Humanists; Machiavelli; More; Reformation; Luther; Calvin; Natural Law; Grotius; Divine Right; Common Law; Bacon; English Revolutionaries; Hobbes; Locke; Astell; Enlightenment; Rousseau; French Revolutionaries; Hume; Burke; Wollstonecraft.

Pol 3253. Modernity and Its Discontents: Late Modern Political Thought. (3-4 cr; §5253)
Theoretical responses to and rival interpretations of Western economy, society, politics, and democratic culture in the modern age; theories of theory; class struggle; end of metaphysics and death of God; technology and bureaucracy; psychology of culture in Hegel, Marx, Tocqueville, Mill, Nietzsche, Weber, Freud.

Pol 3321. Issues in American Public Policy. (3 cr; Prereq–1001 or equival or ¶)
Analysis of the policies of the policy process including agenda formation, formulation, adoption, implementation, evaluation. Attention to selected policy areas.

Pol 3323. Political Tolerance in the United States. (3 cr)
Political importance of civil liberties in American society. Tolerance as a political phenomenon. Issues such as free speech, privacy, religion, race, gender.

Pol 3352W. Fieldwork in the Legislature. (3 cr; Prereq–1001 or equival or ¶)
Field study of Minnesota Legislature; campaigns and elections, party leadership, committee structure, staffing, lobbying, relations with other branches. Students arrange work assignments with legislators.

Pol 3441. Politics of Environmental Protection. (3 cr; Prereq–¶5441 or jr or social science major)
How the American political system deals with environmental issues, how third world countries deal with problems of environmental protection and economic growth, and the way the international community deals with global environmental problems.

Pol 3451W. Politics and Society in the New Europe. (3 cr; Prereq–3051 or Soc 1001 or ¶)
Examining the changing politics and society of the new Europe. Particular focus on generational change and values, political parties, welfare state, the future of European integration, and political stability and democratization.

Pol 3477. Political Development. (3-4 cr; Prereq–1054 or 3051 or ¶)
Political processes and problems associated with economic development; the political economy of underdevelopment and development; problems of state building and the development of political institutions.

Pol 3491. Film and the Study of Latin American Politics. (3 cr; Prereq–1054 recommended)
Introduction to using film to study Latin American politics. Hollywood films explore how the United States “sees” Latin America, its people, and its political problems; films from Latin America explore how Latin American popular culture reflects a country’s political issues. One feature film per week. Brief readings about issues raised by each film.

Pol 3701. American Indian Tribal Governments and Politics. (3 cr; A-F only, max 3501)

Pol 3755. Politics of Race, Class, and Ethnicity. (3-4 cr; Prereq–6 cr in social science)
An introductory examination of how race, ethnicity, and class interact in the political process with particular attention to political conflict through comparative analysis of the United States, South Africa, and Brazil.

Pol 3751. Fieldwork in Politics. (3 cr; Prereq–1001 or equival or ¶)
Field study of political organizations, leadership, campaigns. Students arrange work assignments with candidates.

Pol 3766. Political Psychology. (3 cr; Prereq–1001 or equival or ¶)
Examine how behavior of citizens and political elites is shaped by psychological factors including personality, attitudes, emotions, and cognitive sophistication. Topics include political activism and apathy, leadership charisma, mass media, group identifications, and political culture.

Pol 3835. International Relations. (3 cr)
Introduction to the theoretical study of international relations. Students learn to appreciate how the choice of theoretical perspectives shapes one’s understandings of the structure and practices of global politics.

Pol 3872W. Global Environmental Cooperation. (4 cr; §5872)
Emergence of the environment as a key aspect of the global political agenda. Non-governmental and governmental international organizations. Politics of protection of the atmosphere, rain forest, seas, and other selected issues. International security and the environment.

Pol 3873W. Global Citizenship and International Ethics. (3 cr)
Case studies of ethics in intervention, war, weapons, foreign aid, environmental practices, and human rights are used to examine the global ethical responsibilities of individual citizens and public officials; effectiveness of transnational social movements in influencing policy at domestic and international levels.

Pol 4210. Topics in Political Theory. (3-4 cr; max 8 cr; A-F only, Prereq–13210, A, ¶)

Pol 4275. Contemporary Political Thought. (3 cr. Prereq.–1201 recommended)

The political and cultural crisis of Western humanism in major works of contemporary political thought from the late 19th to the present. Readings and discussion of key texts by authors such as Arendt, Camus, Beinart, Fanon, Foucault, Habermas, Rawls, Sartre, Said. Ideas may include communitarianism, feminism, postcolonialism, postmodernism, and socialism.

Pol 4280. Topics in Political Theory. (3-4 cr [max 8 cr])

Topics in historical, analytical, or normative political theory. Topics vary.

Pol 4303. American Democracy in Crisis. (3-4 cr. Prereq.–1001 or equiv, non-pol sci grad major or #)

Compare the performance of the American political system with the promises of democracy. Discuss a range of interpretations of democratic government and the American national governing process.

Pol 4306. Presidential Leadership and American Democracy. (3-4 cr. Prereq.–1001 or equiv, non-pol sci grad major or #)

No single individual in the American political system is the subject of such high expectations as the president. Examine whether the president’s political and constitutional powers are sufficient to satisfy the high expectations that Americans have of him. Should presidents be expected to dominate American politics?

Pol 4308. Congressional Politics and Institutions. (3-4 cr. Prereq.–1001 or 1002, non-pol sci grad major or #)

Origin/development of U.S. congressional institutions, parties, committees, leaders, lobbying, elections, and relations between Congress/executive branch. Relationship of campaigning/governing, nature of representation, biases of institutional arrangements.

Pol 4309. Justice in America. (3 cr. Prereq.–1001 or 1002, non-pol sci grad major or equiv or #)

The American judiciary, the selection of judges and how and why these individuals and institutions behave the way they do. What influences judicial decisions? What impact do these decisions have? Why do people comply with them?

Pol 4310. Topics in American Politics. (3 cr. Prereq.–1001 or equiv or #)

See Class Schedule for description.

Pol 4315W. State Governments: Laboratories of Democracy. (4 cr. Prereq.–1001 or equiv, non-pol sci grad major or #)

Political behavior, governmental institutions, and public policies in American states; comparison among states, between state and national government, with special attention given to Minnesota.

Pol 4322. Rethinking the Welfare State. (3-4 cr)

Discuss competing arguments about welfare states in advanced industrial countries. Are welfare states the result of sectional interests, class relations, or citizenship rights? Compare American social policy with policies in other western countries.

Pol 4327. The Politics of American Cities and Suburbs. (3 cr. Prereq.–1001 or 1002, non-pol sci grad major or equiv or #)

Development and role of American local government; forms and structures; relationships with the federal government; local politics and patterns of power and influence.

Pol 4331. Thinking Strategically in Domestic Politics. (3-4 cr)

A survey of applications of rational-choice and game theory to important features of domestic politics in the United States and elsewhere.

Pol 4410. Topics in Comparative Politics. (3 cr)

Topics of current analytical or policy importance to comparative politics. Topics vary.

Pol 4461W. European Government and Politics. (4 cr. Prereq.–Pol 1054 or 3051 or non-pol sci grad student or #)

European political institutions in their social settings; power and responsibility; governmental stability; political decision making, government and economic order.

Pol 4467. Politics and Market in Contemporary Japan. (3-4 cr. SEAS 4467. Prereq.–1054 or 3051 or non-pol sci grad or #)

Study how Japan combined rapid economic development and social stability in the postwar period and the strengths and the weakness of the Japanese model of capitalism, particularly in today’s new “globalized” world.

Pol 4471. After Communism: Russia and the Commonwealth of Independent States. (3-4 cr. Prereq.–1054 or 3051 or non-pol sci grad or #)

Politics of the newly independent states of the former Soviet Union, particularly Russia. Political transformation, the sources of political stability and instability, economic reform, and the problems of a multinational state.

Pol 4473. Chinese Politics. (3 cr. SEAS 4473)

Focuses on fundamental conflicts in Chinese society: the democracy movement, human rights, class divisions, gender struggles, environmental issues, and capitalist vs. socialist development strategies. Secondary topics: foreign relations and domestic and foreign political issues in Taiwan.

Pol 4477. Struggles and Issues in the Middle East. (4 cr. Prereq.–1054 or 3051 or non-pol sci grad or #)

Turkey, Iran, Israel, and selected Arab states. Domestic politics of religious/sectarian, ethnic, economic, environmental, and other policy/identity issues. Regional politics of water access, Israeli/Palestinian/Arab world relationships, oil, and the Persian/Arabian Gulf, and human rights.

Pol 4478. Contemporary Politics in Africa and the Colonial Legacy. (4 cr. Prereq.–1054 or 3051 or non-pol sci grad or #)

Examines how current politics in mainly, though not exclusively, sub-Saharan Africa have been shaped by the pre-colonial and colonial processes. Reality of independence: recurrent political and economic crises, global context and prospects for effective democracy.

Pol 4479. Latin American Politics. (3 cr. SEAS 4479. Prereq.–1054 or 3051 or non-pol sci grad or #)

An overview of Latin American politics and political economy focused on authoritarianism, human rights, and re-democratization; development and economic policy; social movements; ethnicity and race; religion; revolution; U.S.–Latin American relations.

Pol 4481. Governments and Markets. (3-4 cr. Prereq.–1054 or 3051 or non-pol sci grad or #)

Study the connection between democracy and markets with attention to the experiences of countries in North America and Europe.

Pol 4483. Grassroots Politics. (3-4 cr)

Politics from the bottom up: politics of daily life, powerlessness, workplace politics, everyday resistance, local organizing, protest, rebellion, and social movements.

Pol 4485. Human Rights and Democracy in the World. (3 cr. Prereq.–At least one 1000 or 3000 course in pol sci, non-pol sci grad or #)

Examine the question of human and democracy rights in global and comparative perspectives. Explore the history of ideas about human rights and democracy and contrast economic, political, psychological, and ideological explanations for repression.

Pol 4487. The Struggle for Democratization and Citizenship. (4 cr. Prereq.–Non-pol sci grad)

Traces the origins of the democratic process with particular emphasis on how the disenfranchised fought to become included. Begins with the history of the democratic movement from its earliest moments in human history to the present and attempts to draw a balance sheet.

Pol 4501. The Supreme Court and Constitutional Interpretation. (3 cr. Prereq.–1001 or 1002 or equiv or [non-pol sci] grad student or #)

Historical/analytical approaches to Court’s landmark decisions. Explores theory/techniques of judicial review. Relates Court’s authority to wider political/social context of American government.

Pol 4502. The Supreme Court, Civil Liberties, and Civil Rights. (3 cr. Prereq.–1001 or 1002 or equiv or [non-pol sci] grad major or #)

Supreme Court’s interpretation of Bill of Rights, 14th amendment. Focuses on freedom of speech, press, religion; crime/punishment; segregation/desegregation, affirmative action; abortion/privacy.

Pol 4523. The Politics of the Regulatory Process. (3 cr. Prereq.–1001 or 1002 or equiv or #, 4309 or 4501 or or non-pol sci grad major)

Operations of regulatory agencies considered in context of political and legal environment. Principles of federal administrative law, informal procedures, interest group activity; philosophy of regulation; politics and processes of deregulation.

Pol 4525. Federal Indian Policy. (3 cr. A-F only, 5Am, 4525)

Formulation, implementation, evolution, comparison of Indian policy from pre-colonial times to self-government of new millennium. Theoretical approaches to federal Indian policy. Major federal Indian policies. Views/attitudes of policy-makers, reactions of indigenous nations to policies. Effect of bodies of literature on policies.

Pol 4561. Comparative Legal Systems. (3 cr. Prereq.–3R or AR or non-pol sci grad major)

Survey of the principal legal systems of the Western world. Examine the role of the legal system in relation to various political and economic systems and the contrast between the common law and civil law traditions.

Pol 4737. American Political Parties. (3-4 cr. Prereq.–1001 or equiv or AR or #)

The American two-party system; party influence in legislatures and executives; decline of parties and their future.

Pol 4766. American Political Culture and Values. (3-4 cr. Prereq.–1001 or equiv or non-pol sci grad major or #)

Empirical analysis of basic political values—individualism, freedom, and equality; dominant beliefs about democratic principles, materialism, capitalism, citizenship, patriotism and heroism.

Pol 4767. Public Opinion and Voting Behavior. (3 cr. Prereq.–1001 or equiv or #)

Major factors influencing electoral decisions and political attitude formation/change. Data analysis lab required.

Pol 4810. Topics in International Politics and Foreign Policy. (3-4 cr [max 8 cr])

Analysis of selected issues in contemporary international relations. Topics vary.

Pol 4832. Defending America: U.S. Security Policy. (3-4 cr)

History of U.S. security doctrine. Examination of major issues in present U.S. security policy (e.g., the future of NATO, nuclear strategy in the absence of a clear enemy, nuclear and chemical international arms control). The political and bureaucratic process of making U.S. defense policy.

Pol 4833. The U.S. in the Global Economy. (3-4 cr. Prereq.–3835 recommended)

Domestic and international politics of United States, foreign economic policy (trade, aid, investment, monetary, and migration policies). Effects of policies and international economic relations on the U.S. economy and U.S. politics.

Pol 4836. Making Foreign Policy: Perceptions and Decisions. (3-4 cr. Prereq.–Non-pol sci grad)

Foreign policy decision making beyond the “to serve the national interest” cliche. Theoretic understandings from the study of culture, political psychology, organizational theory, democratic theory, bureaucratic politics, game theory, and political economy. Decision making in cross-cultural settings.
Portuguese (Port)

Department of Spanish and Portuguese Studies
College of Liberal Arts

Port 1101. Beginning Portuguese. (5 cr)
Speaking and understanding Portuguese; pronunciation; introduction to writing and reading; basic grammar; cultural aspects of language and civilizations of Portuguese-speaking world.

Port 1102. Beginning Portuguese. (5 cr)
Prereq–1101 or #
Speaking and understanding Portuguese; pronunciation; introduction to writing and reading; basic grammar; cultural aspects of language and civilizations of Portuguese-speaking world.

Port 1103. Intermediate Portuguese. (5 cr)
Prereq–1102 or #
Speaking and comprehension. Development of reading and writing skills based on Portuguese-language materials.

Port 1104. Intermediate Portuguese. (5 cr)
Prereq–1103 or #
Speaking and comprehension. Development of reading and writing skills based on materials from Portugal and Brazil. Grammar review; compositions and short presentations.

Port 3001. Portuguese for Spanish Speakers. (4 cr)
Prereq–Span 3001 or # or # [for speakers of other Romance languages]
Based on student’s knowledge of Spanish. Contrastive approach to Portuguese phonemic/morpho-syntactic structures.

Port 3003. Portuguese Conversation and Composition. (4 cr)
Prereq–1104 or Span 3001

Port 3501V. Honors: Foundations of Lusophone Cultures. (3 cr; A-F only. Prereq–3003 or Span 3003, honors)
Study of origins and development of modern Portuguese-speaking cultures.貴州 Brasilia, Portugese historical, (geo)political, and socioeconomic contexts. Films from Brazil, Portugal, or Lusophone Africa analyzed under interdisciplinary framework, noting aspects related to cinematography/rhetorics.

Port 3520. Portuguese Literary and Cultural Studies. (5 cr. Prereq–Port 1101 or #)
History, culture (music, art, cinema, literature, intellectual thought, popular culture, media), and social problems (ethnicity, tropical deforestation).

Port 3520W. Foundations of Brazilian Culture. (3 cr; Prereq–3003 or equiv, honors)
Prereq–Port 1104 or #
Emphasis on modern Brazilian society. History, culture (music, art, cinema, literature, intellectual thought, popular culture, media), and social problems (ethnicity, tropical deforestation).

Port 3530V. Honors: Literatures and Cultures of Lusophone Africa. (3 cr; A-F only. Prereq–3003 or Span 3003, honors)
Prereq–Port 1101 or #
Origins/development of Lusophone Africa (Angola, Cape-Verde, Guinea-Bissau, Mozambique, Sao Tome/Principe) using literature, cultural/literary criticism, history, anthropology, and various media (e.g., film, art, music, Internet).

Port 3530W. Literatures and Cultures of Lusophone Africa. (3 cr)
Prereq–Port 3003 or Span 3003
Origins/development of Lusophone Africa (Angola, Cape-Verde, Guinea-Bissau, Mozambique, Sao Tome/Principe) using literature, cultural/literary criticism, history, anthropology, and various media (film, art, music, Internet).

Port 3603. Portuguese-Speaking Cultures and Literatures in Translation. (3 cr)
Prereq–Port 3530W or #
Fims from Portuguese-speaking world in their historical, (geo)political, and socio-economic contexts. Films from Brazil, Portugal, or Lusophone Africa analyzed under interdisciplinary framework, noting aspects related to cinematography/rhetorics.

Port 3800H. Honors: Film Studies in Portuguese. (3 cr; A-F only. Prereq–Port 3003 or #)
Fims from the Portuguese-speaking world in their historical, (geo)political, and socioeconomic contexts. Films from Brazil, Portugal, or Lusophone Africa analyzed under interdisciplinary framework, noting aspects related to cinematography/rhetorics.

Port 3830. Film Studies in Portuguese. (3 cr; A-F only. Prereq–Port 3003 or #)
Fims from the Portuguese-speaking world in their historical, (geo)political, and socio-economic contexts. Films from Brazil, Portugal, or Lusophone Africa analyzed under interdisciplinary framework, noting aspects related to cinematography/rhetorics.

Port 3830H. Honors: Film Studies in Portuguese. (3 cr; A-F only. Prereq–Port 3003 or #)
Fims from the Portuguese-speaking world in their historical, (geo)political, and socio-economic contexts. Films from Brazil, Portugal, or Lusophone Africa analyzed under interdisciplinary framework, noting aspects related to cinematography/rhetorics.

Port 3910. Topics in Lusophone Literatures. (3 cr)
Prereq–Port 3003 or # (Port 3310, 33910H)
Critical reading of Lusophone literary texts (Brazil, Portugal, Portuguese-speaking Africa) representing various genres (novel, short story, poetry). Terminology of criticism, literary problems, techniques.

Port 3910H. Honors: Topics in Lusophone Literatures. (3 cr; A-F only. Prereq–Port 3310, 33910H)
Prereq–Port 3003, honors
Lusophone literary texts (from Brazil, Portugal, Portuguese-speaking Africa) representing various genres (e.g., novel, short story, poetry). Terminology of criticism, literary problems, techniques.

Port 3970. Directed Readings. (1-4 cr)
Prereq–Port 3530 or Port 3003, honors
Guided individual reading or study.

Port 5520. Portuguese Literary and Cultural Studies. (3 cr)
Prereq–Port 3530 (or #)
Origins of and development of modern Portuguese nation (late 15th to 20th century) using literature, cultural and literary criticism, history, sociology and various media (film, art, music, Internet). Main cultural problematic pertaining to Portugal as well as fundamental literary texts.

Port 5530. Brazilian Literary and Cultural Studies. (3 cr)
Prereq–Port 3530 (or #)
Origins of and development of modern Brazilian nation (late 16th to 20th century) using literature, cultural and literary criticism, history, sociology and various media (film, art, music, Internet). Main cultural problematic pertaining to Brazil as well as fundamental literary texts.

Port 5540. Literatures and Cultures of Lusophone Africa. (3 cr)
Prereq–Port 3530 (or #)
Origins of and development of Lusophone Africa (Angola, Mozambique, Cape-Verde, Guinea-Bissau, Sao Tome and Principe) using literature, cultural/literary criticism, history, sociology, and various media (film, art, music, Internet).

Port 5910. Topics in Lusophone Cultures. (3 cr)
Prereq–Port 3530
Cultural manifestations in Portuguese-speaking world (Portugal, Brazil, Lusophone Africa): literature, history, film, intellectual thought, critical
theory, popular culture. Topics include: Portuguese colonialism; postcolonial nation in Lusophone world; Lusophone women writers; Luso-Brazilian (post)modernity.

Port 5920. Figures in Lusophone Literatures. (3 cr. [max 9 cr.], Prereq–#)
One Portuguese, Brazilian, or other major Portuguese-speaking writer or group of writers whose work has had impact on thought, literature, or social problems (e.g., Machado de Assis, Fernando Pessoa, Clarice Lispector). Figures specified in Class Schedule.

Port 5930. Topics in Brazilian Literature. (3 cr. [max 9 cr.], Prereq–#)
Major issues of Brazilian literature; focuses on important authors, movements, currents, genres. Problems, socioeconomic questions, literary techniques related to Brazilian themes. Topics specified in Class Schedule.

Port 5970. Directed Readings. (3 cr [max 9 cr.]. Prereq–MA or PhD candidate, #, A, #)
Lusophone studies (Portuguese-speaking Africa, Brazil, Portugal). Areas not covered in other courses. Students submit reading plans for particular topics, figures, periods, or issues.

Port 5990. Directed Research. (1-4 cr [max 9 cr.]. Prereq–#, A, #)
Graduate-level research in literatures and cultures of the Portuguese-speaking world. Topics vary.

Pre-Major Advising (PMA)

College of Liberal Arts Student Services
College of Liberal Arts

PMA 1005. Orientation to the Health Sciences. (2 cr. Prereq–[1st or 2d yr] student)
Academic/professional options. Discussion, textbook readings, experimental activities, self-assessment exercises, presentations by health care professionals.

PMA 3008. Orientation to Medicine. (1 cr; S-N only)
Sociological issues related to the discipline of medicine and insights into medicine as a career and educational experience. Overview of medicine including a variety of guest lecturers from the community and the University.

Program for Individualized Learning (PIL)

College of Continuing Education

PIL 3200. Continuing Studies. (1 cr; S-N only. Prereq–PIL student, A)
Students complete work for another PIL course in which an incomplete was received. Registration allows students to access academic advising in PIL.

PIL 3211. Degree Planning. (8 cr; S-N only. Prereq–PIL student, A)
Students develop individualized curricular plans for their baccalaureate degrees.

PIL 3212. Degree Planning. (4 cr; S-N only. Prereq–PIL student, A)
Continuation or additional registration for degree planning.

PIL 3251. Individualized Study. (4 cr; S-N only. Prereq–PIL student, A)
Students develop a project proposal, identify objectives/resources, conduct research, accomplish an outcome, secure a narrative evaluation from a project adviser/evaluator.

PIL 3281. Major Project. (8 cr; S-N only. Prereq–PIL student, A)
Students complete a major project as partial fulfillment of criterion for Primary Area Studies in their degree plans.

PIL 3282. Major Project. (4 cr; S-N only. Prereq–PIL student, A)
Additional registration for students who need to complete their major projects.

PIL 3283. Major Project. (4 cr; S-N only. Prereq–PIL student, A)
Additional registration for students completing their major projects.

PIL 3291. Graduation Preparation. (8 cr; S-N only. Prereq–PIL student, A)
Students compile a graduation dossier for presentation to preliminary review committee. Dossier consists of criteria summary, introduction, transcripts, illustrative materials, project proposals, degree plan.

PIL 3292. Graduation Preparation. (4 cr; S-N only. Prereq–PIL student, A)
Students complete draft dossier.

PIL 4299. Graduation Review. (4 cr; S-N only. Prereq–PIL student, A)
Students revise graduation dossier, present it to graduation review committee for BA or BS degree recommendation.

Psychology (Psy)

Department of Psychology
College of Liberal Arts

Psy 1001. Introduction to Psychology. (4 cr. §GC 1281)
Scientific study of human behavior. Problems, methods, findings of modern psychology.

Psy 1905. Freshman Seminar. (3 cr; A-F only. Prereq–Fr or no more than 36 cr.)
Topics specified in Class Schedule.

Psy 3005W. Introduction to Research Methods and Statistics. (4 cr; A-F only, Prereq–PIL–1001)
Concepts/procedures used to conduct/evaluate research, especially in social sciences. Benefits/limitations of traditional research methods. Using statistics to describe/interpret research outcomes. Evaluating scientific claims.

Psy 3011. Introduction to Learning and Behavior. (3 cr. Prereq–1000, #, A-F)
Basic methods and findings of research on learning and behavior change. Survey of 20th-century theoretical perspectives, including contemporary models. Emphasis on animal learning and behavioral psychology.

Psy 3031. Introduction to Sensation and Perception. (3 cr. Prereq–1000)
Psychological, biological, and physical bases of sensory experience in humans and animals. Emphasis on the senses of vision and hearing.

Psy 3051. Introduction to Cognitive Psychology. (3 cr. Prereq–PIL–1001)
Scientific study of the mind in terms of representation and processing of information. Research and theory on cognitive abilities such as perception, attention, memory, language, and reasoning. Aspects of computational modeling and neural systems.

Psy 3061. Introduction to Biological Psychology. (3 cr. §5061. Prereq–1001 or Biol 1009)
Basic neurophysiology/neuroanatomy, neural mechanisms of motivation, emotion, sleep-wakefulness cycle, learning/memory in animals/humans. Neural basis of abnormal behavior, drug abuse.

Psy 3101. Introduction to Personality. (3 cr. §5101. Prereq–1001)
Major theories, issues, facts about personality and personality assessment. Review of important historical/contemporary perspectives (e.g., psychoanalysis, humanistic psychology, trait psychology, behaviorism, evolutionary psychology) on human nature/individuality.

Psy 3135. Introduction to Individual Differences. (3 cr. §5335. Prereq–3003WM)
Differential methods in studying human behavior. Overview of psychological traits. Influence of age, sex, heredity, and environment in individual/group differences in ability, personality, interests, and social attitudes.

Psy 3137. Readings in Behavioral Genetics. (1 cr. Prereq–5137)
This course may be taken as an optional supplement to lecture course in behavioral genetics (5137). Each week students will read one or two articles relevant to topics covered in the lecture and discuss the articles with the instructor during a one hour contact session. Readings will not overlap those assigned in the lecture class.

Psy 3201. Introduction to Social Psychology. (4 cr. Prereq–1001 or #)
Overview of theories/research in social psychology. Emphasizes attitudes/persuasion, social judgment, the self, social influence, aggression, prejudice, helping, and applications.

Psy 3301. Introduction to Cultural Psychology. (3 cr; A-F only, Prereq–[1001, 3005W] or #)
Theories/research on how culture influences basic psychological processes (e.g., emotion, cognition, psychopathology) in domains that span different areas of psychology (e.g., social, clinical, developmental, industrial-organizational) and of other disciplines (e.g., anthropology, public health, sociology).

Psy 3604. Introduction to Abnormal Psychology. (3 cr. §5604H. Prereq–1001)
Diagnosis, classification, etiologies of behavioral disorders.

Psy 3617. Introduction to Clinical Psychology. (3 cr. Prereq–3604 or 5604H)

Psy 3666. Human Sexuality. (3 cr. Prereq–1001)
Overview of theories, research, and contemporary issues in human sexual behavior from an interdisciplinary perspective. Topics include sexual anatomy and physiology, hormones and sexual differentiation, cross-cultural perspectives on sexual development, social and health issues, and sexual dysfunction and therapy.

Psy 3711. Introduction to Industrial and Organizational Psychology. (3 cr. Prereq–[1000, 3005W or 4801 or equiv] or #)
Application of psychological theory and research to recruitment, personnel selection, training and development, job design, work group design, work motivation, leadership, performance assessment, and job satisfaction measurement.

Psy 3902W. Major Project in Psychology. (4 cr. A-F only, Prereq–3005W or other psychology major)
Seminar for completing undergraduate major project paper.

Psy 3960. Undergraduate Seminar. (1-5 cr [max 45 cr.]. Prereq–1001)
Current topics in psychology. Topics listed in psychology office.

Psy 3993. Directed Study. (1-6 cr [max 24 cr.]. Prereq–A, A, #)
Independent reading leading to paper or to oral or written exam.

Psy 3994. Directed Research. (1-6 cr [max 24 cr.]. Prereq–A, A

Individual empirical project leading to written report.

Psy 3996. Undergraduate Field Study/Internship in Psychology. (1-6 cr [max 12 cr.]. Prereq–1001, A, A, #)
Supervised field work/internship experiences in community or industry pertinent to formal academic training in psychology.
Psy 4011. Applied Behavioral Psychology. (3 cr. Prereq–3011 or #) Fundamental concepts of behavioral psychology. Practical techniques of behavior modification with humans/animals. Employs functional analyses of behavior deficits/excesses, development/implementation of programs to bring about meaningful behavior change.

Psy 4036. Perceptual Issues in Visual Impairment. (3 cr. Prereq–1001 or #) Contemporary knowledge on visual, tactile, and auditory perception informs us about the challenges and capabilities of people who are blind or have low vision. Topics include reading, space perception, mobility, and the strengths and weaknesses of pertinent adaptive technology.


Psy 4501. Psychology of Women. (3 cr. Prereq–1001 or #) Survey of current theory and research regarding psychology of women and psychological sex differences including topics related uniquely to women (e.g., pregnancy) as well as sex differences in personality, abilities, and behavior.

Psy 4801. Introduction to Statistics. (3 cr. Prereq–3005W or #) Descriptive/inferential statistics, hypothesis testing, correlation, regression.

Psy 4902V. Honors Project. (1-6 cr; max 5 cr; A-F only. Prereq–Honors, #,) Critical literature review or empirical study.

Psy 4993. Directed Study: Special Areas of Psychology and Related Sciences. (1-6 cr max 16 cr) Prereq–#,


Psy 4996H. Honors Internship/Externship. (1-6 cr; A-F only; Prereq–Honors, #, Δ, L) Supervised internship/externship experience in a community-service or industrial setting relevant to formal academic training/objectives.

Psy 5012. Psychology of Conditioning and Learning. (4 cr. Prereq–3011 or 3051 or grad student or #) Review/evaluation of key questions, methods, theories, and data about classical conditioning, instrumental learning, and elementary cognitive processes. Emphasizes animal models.

Psy 5014. Psychology of Human Learning and Memory. (3 cr. Prereq–3011 or 3051, except honors, grads) Survey of basic methods and findings of research on human learning, memory, and cognition. Emphasis on major factors influencing human encoding or acquisition of information and skill, retention, and retrieval. Theoretical perspectives on underlying processes of encoding, retention, and retrieval.

Psy 5015. Cognition, Computation, and Brain. (3 cr. Prereq–3051 [open for honors/graduate students]) Human cognitive abilities (perception, memory, attention) from different perspectives (e.g., cognitive psychological approach, cognitive neuroscience approach).

Psy 5031W. Perception. (3 cr. Prereq–3031 or 3051 or #) Cognitive, computational, and neuroscience perspectives on visual perception. Topics include color vision, pattern vision, image formation in the eye, object recognition, reading, and impaired vision.

Psy 5034. Psychobiology of Vision. (3 cr. Prereq–3031 or #) Analysis of the properties and biological bases of visual perception in humans and animals. Emphasis on color vision, visual sensitivity and adaptation, nerve cells and circuits in the eye, structure and function of the visual brain.

Psy 5036W. Computational Vision. (3 cr. Prereq–3031 or Math 3201 or #) Applications of psychology, neuroscience, computer science to design principles underlying visual perception, visual cognition, action. Compares biological/psychological algorithms of images with respect to image formation, perceptual organization, object perception, recognition, navigation, motor control.

Psy 5037. Psychology of Hearing. (3 cr. Prereq–3031 or #) Consequences of different types of brain damage on human perception/cognition. Neural mechanisms of physiological/neuroanatomical mechanisms underlying behaviors of animals, including humans. Neural basis of learning/memory, sleep, wakefulness, and attention processes. Effects of drugs on behavior.


Psy 5064. Brain and Emotion. (3 cr; A-F only. Prereq–3061 or 5061 or #) Introduction to affective neuroscience. Focuses on how brain promotes emotional behavior in animals/humans. Biological theories of emotion reviewed in historical, current theoretical contexts. Research related to specific “basic” emotions, including brain substrates for fear, sadness, pleasure, attachment. Implications for understanding emotional development, vulnerability to psychiatric disorders.

Psy 5101. Personality Psychology. (3 cr. Prerequisite: Psychology 4101 or #, honors or grad student) Theories and major issues/findings on personality functioning, personality structure, and personality assessment. Historically important and currently influential perspectives.

Psy 5135. Psychology of Individual Differences. (3 cr 3135 Prerequisite: [3005W or equivalent, 5862] or #) Differential methods in study of human behavior. Overview of normal and abnormal traits. Influence of age, sex, heredity, and environment in individual/group differences in ability, personality, interests, and social attitudes.


Psy 5138. Psychology of Aging. (3 cr. Prereq–3005W or equiv) Theories/findings concerning age-related changes in mental health, personality, cognitive functioning, productivity are reviewed/interpreted within context of multiple biological, social, and psychological changes that accompany age.

Psy 5202. Attitudes and Social Behavior. (3 cr. Prereq–3011 or Math 3201 or #) Theory/research in social psychology, other fields in psychology of attitudes, beliefs, values. These fields’ relationship to social behavior. Principles/theories of persuasion, conformity.

Psy 5204. Psychology of Interpersonal Relationships. (3 cr; A-F only. Prereq–3201 or #) Introduction to interpersonal relationship theory and research findings, with emphasis on conceptual and methodological issues in relationship research.

Psy 5205. Applied Social Psychology. (3 cr. Prereq–3011 or grad student) Applications of social psychology research/theory to domains such as physical/mental health, education, the media, desegregation, the legal system, energy conservation, public policy.

Psy 5206. Social Psychology and Health Behavior. (3 cr; A-F only. Prereq–3201 or grad student or #) Survey of social psychological theory/research pertaining to processes by which people develop beliefs about health/illness. Relationship between these beliefs, adoption of health-relevant behavior. Effect of psychological factors on physical health.

Psy 5207. Personality and Social Behavior. (3 cr; A-F only. Prereq–3101 or 3011 or honors or grad student or #) Conceptual/methodological strategies for scientific study of individuals and their social worlds. Applications of theory/research to issues of self, identity, and social interaction.


Psy 5604H. Abnormal Psychology. (3 cr. Prerequisite: Psychology 4101 or #) Application of psychological research/theory to issues in personnel selection/assessment and to measurement of job performance. Applying principles of individual differences, psychological measurement to decision making in organizations (recruitment, selection, performance appraisal).

Psy 5701. Organizational Staffing and Decision Making. (3 cr. Prereq–[3005W or 4801 or equiv], 3711) or #) Application of psychological research/theory to issues in personnel recruitment/seLECTION and to measurement of job performance. Applying principles of individual differences, psychological measurement to decision making in organizations (recruitment, selection, performance appraisal).

Psy 5702. Psychological Foundations of Individual Behavior in Organizations. (3 cr. Prereq–[3005W or 4801 or equiv], 3711) or #) Theory/research on human behavior/performance in organizations. Organizational socialization processes across career span, leadership styles/processes, work team structures/characteristics. Problem-solving, decision-making processes. Group dynamics, inter-group relations.

Psy 5705. Psychology of Work Motivation. (3 cr. Prereq–4801 or equiv, 3711) or #) Motivation issues related to the behavior and performance of individuals in organizational settings. Contemporary work motivation theories and practices that relate person factors and environmental factors to skill acquisition, job performance, organizational citizenship behavior, and job satisfaction.

Psy 5707. Personnel Psychology. (4 cr. Prerequisite: Psychology 4101 or #) Application of psychological research/theory to organizational staffing, evaluation, and training. Principles of individual differences and
psychological measurement applied to decision making, staffing, and instruction in organizations. Job analysis, recruitment, screening, selection, performance appraisals, criterion measurement, organizational training, learning, aptitude treatment interactions.

Psy 5708. Organizational Psychology. (4 cr. §5702, §5705. Prereq.—[3005W or equiv], 3711 or #) Psychological causes of behavior in work organizations. Consequences for individual fulfillment and organizational effectiveness. Individual differences, social perception, motivation, stress, job design, leadership, job satisfaction, teamwork, organizational culture.

Psy 5862. Psychological Measurement: Theory and Methods. (3 cr. Prereq.—4801 or equiv) Types of measurements (tests, scales, inventories) and their construction. Theory/measurement of reliability/validity.


Psy 5960. Topics in Psychology. (1-4 cr [max 8 cr]. Prereq.—1001. [1r or sr or grad student]) Special course or seminar. Topics listed in psychology office.

Public Affairs (PA)

Hubert H. Humphrey Institute of Public Affairs

PA 1490. Topics in Social Policy. (1-3 cr [max 9 cr]) Topics in social policy.


PA 1961W. Personal Leadership in the University. (3 cr. Prereq—Fr or soph) Introduction to leadership theory, personal development, interpersonal relations, leadership at University of Minnesota. Personal assessment, written/verbal presentation, resume writing, electronic communication, goal setting, coping with group dynamics.

PA 3311W. Introduction to Public Policy Analysis. (3 cr; A-F only. Prereq.—Apex 1101 or Econ 1101) Elements of public policy analysis, policy analysts’ roles, market failure, public choice, bureaucratic decision making, and public services.

PA 3401. The Arts of Liberty: Educating for Democracy in Information Age. (3 cr) “Hands-on” approach to education for democracy. Core concepts and their different meanings in American history, especially ideas of freedom, work, and democracy, and how these participate in community projects, either through the Jane Addams School or as “democratic coaches” for teams of young people. Two essays and a journal.

PA 3961W. Leadership, You, and Your Community. (3 cr. Prereq.—[1961 or EdPA 1301], undergrad leadership minor or jr or sr) Leadership and leadership capacities. Multicultural/ multidimensional perspectives. Students examine their views on leadership. Leadership theory/practice. Group dynamics/behavior. Applying knowledge to practice.

PA 3971. Leadership Minor Field Experience. (2 cr. A-F only. Prereq.—[3961 or EdPA 3302], undergrad leadership minor) Core leadership course information applied to leadership situations off campus. Settings include community or educational organizations, corporations, University student organizations, and formal internships. Students identify two leadership objectives from among personal, interpersonal, and organizational development. Experiential learning, individual presentations, group discussions, critical reflection/writing.

PA 3990. General Topics in Public Policy. (1-3 cr [max 9 cr]) General topics in public policy.

PA 4190. Topics in Public and Nonprofit Leadership and Management. (3 cr [max 9 cr]) Topics in public/nonprofit leadership and management.

PA 4200. Urban and Regional Planning. (3 cr) Fundamental principles of urban/regional land-use planning. Introduction to planning theory and its applications. Political-economic context of urban/regional planning.

PA 4290. Topics in Planning. (1-3 cr [max 12 cr]) Topics in social policy.

PA 4421. Racial Inequality and Public Policy. (3 cr) Historical roots of racial inequality in American society. Contemporary economic consequences. Public policy responses to racial inequality. Emphasizes thinking/analysis that is critical of strategies offered for reducing racism and racial economic inequality.

PA 4490. Topics in Social Policy. (1-3 cr [max 9 cr]) Topics in social policy.

PA 4961W. Self-Developed Leadership in the World. (3 cr; A-F only. Prereq.—[3961 or EdPA 3302], [3971 or EdPA 3402], undergrad leadership minor) Leadership theory, community building/social change, systems thinking. Students conduct/present research on leadership models through literature review, internships, and study groups. Students produce major paper describing research project. Students assemble portfolio, participate in two-day leadership retreat.

PA 5001. Intellectual Foundations of Public Action. (1.5 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Evolution of intellectual approaches that underlie public planning, management, and policy analysis as strategies for public action. How public decision making is shaped by knowledge and values; role of rationality. Conceptual approaches to public action along descriptive/normative lines and structure/process lines.

PA 5002. Introduction to Policy Analysis. (1.5 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ pol or urban and regional planning or publ hth or #) Process of public policy analysis from problem structuring to communication of findings. Commonly used analytical methods. Alternative models of analytical problem resolution.

PA 5003. Introduction to Financial Analysis and Management. (1.5 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ pol or urban and regional planning or publ hth or #) Basic financial and accounting concepts and tools used in public and nonprofit organizations. Fund accounting, balance sheet and income statement analysis, cash flow analysis, and public sector and nonprofit sector budgeting processes. Lectures and discussions, as well as cases and examples from nonprofit and public sector organizations.

PA 5004. Introduction to Planning. (3 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or [urban and regional planning] or publ hth) History, institutional development of urban planning as a profession. Intellectual foundations, planning theory. Roles of urban planners in U.S./international settings. Scope, legitimacy, limitations of planning and of planning process. Issues in planning ethics and in planning in settings of diverse populations/stakeholders.

PA 5011. Public Management and Leadership. (3 cr; A-F only. Prereq.—Major in [publ aff or publ policy or sci/tech] or environ policy or urban/regional planning or publ hth) Challenges facing higher-level managers in public/nonprofit organizations in a mixed economy and democratic republic. Distinctive features of public/nonprofit management, skills necessary for effective management, manager’s role as creator of public value. Lectures, case discussions.

PA 5012. The Politics of Public Affairs. (3 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Stages of policy making from agenda setting to implementation. Role and behavior of political institutions (courts, legislatures, executives, and bureaucracies) and citizens, social movements, and interest groups. Concepts of political philosophy. Theories of the state. Team taught interdisciplinary course with small discussion sections.

PA 5013. Law and Urban Land Use. (1.5 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Role of law in regulating and shaping urban development. Land use, environmental quality, and local and regional governmental services. Interface between public and private sector.

PA 5021. Economics for Policy Analysis and Planning I. (2-3 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Introduction to a selection of tools useful for public policy: intermediate microeconomics, rudiments of macroeconomics, and central concepts of international trade.

PA 5022. Economics for Policy Analysis and Planning II. (2-3 cr; A-F only. Prereq.—[5021 or equiv], major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Application of economic reasoning to a variety of public policy issues that may vary by section. Includes cost-benefit analysis, nonmarket valuation, and tax analysis.

PA 5031. Empirical Analysis. (1-2 cr; A-F only. Prereq.—Major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Basic statistical tools for empirical analysis of public policy alternatives. Frequency distributions, descriptive statistics, elementary probability and probability distributions, statistical inference, estimation and hypothesis testing, cross-tabulation, and chi-square distribution, analysis of variance, correlation, simple and multiple regression analysis.

PA 5032. Intermediate Regression Analysis. (1-1.5 cr; A-F only. Prereq.—[5031 or equiv], major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Bivariate and multivariate models of regression analysis and assumptions behind them. Problems using these models when such assumptions are not met.

PA 5033. Multivariate Techniques. (1-1.5 cr; A-F only. Prereq.—[5031 or equiv], major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Examines public affairs topics using maximum likelihood estimation approaches.

PA 5034. Community Analysis and Planning Techniques. (2 cr. Prereq.—[5031 or equiv], major in publ aff or publ policy or sci, tech, and environ policy or urban and regional planning or publ hth or #) Data analysis techniques for practitioners in fields of planning, management, and policy analysis. Focus on work at community and regional levels. Population analysis and forecasting techniques relevant for small geographic areas. Techniques for regional and local economic analysis, such as shift-share analysis, economic base, and location quotient analysis.
PA 5035. Survey Research and Data Collection. (1.5 cr; A-F only. Prereq—Grad or equiv; major in publ aff or publ policy or sc, tech, and environ world or urban and regional planning or publ hth or #) Introduction to survey research methods emphasizing applications to policy and applied research. Research design choices (e.g., descriptive, experimental, case studies), sampling, variable specification and measurement, conducting interviews, mailed questionnaires, qualitative techniques.

PA 5101. Management and Governance of Nonprofit Organizations. (1.5 cr. Prereq–Grad or #) Draws on theories, concepts, and real world examples to explore critical managerial challenges. Governance systems, strategic management practices, effect of different funding environments, management of multiple constituencies. Different types of nonprofits using economic/behavioral approaches.

PA 5102. Organization Design and Change. (1.5 cr. Prereq–Grad or #) Basic concepts related to organizational design decisions. Managerial challenges associated with organizational change in context of public sector agencies and nonprofit organizations. Major forces for change, kinds of change, management of change. Case-based analysis/discussion.


PA 5113. State and Local Public Finance. (3 cr. Prereq–Grad or #) Theory/practice of financing. Providing public services at state/local level of government. Emphasizes integrating theory/practice, applying materials to specific policy areas, and documenting wide range of institutional arrangements across/ within the 50 states.

PA 5115. State and Local Public Services and Finance. (3 cr. A-F only. Prereq–ApEc 3001 or equiv) Organization, delivery, economic analysis, and finance of state and local public services and functions.

PA 5121. Intergovernmental Relations. (3 cr. Prereq–Grad or #) Theory/practice of intergovernmental relations in the United States. Historical, political, and economic roots of contemporary institutions. Intergovernmental dimensions of specific policy areas: education, economic development, metropolitan affairs, social welfare, and other areas of student interest.

PA 5122. Law and Public Affairs. (3 cr. Prereq–Grad or #) Overview of evolution of American legal system. Role of courts, legislatures, and political actors in changing law. How law is used to change public policy.

PA 5123. Financial and Development Strategies for Nonprofit and Public Organizations. (1.5 cr. Prereq–Grad or #) Nonprofit/public sector financial/development strategies, political strategies used to obtain funding, philanthropy’s historical role in public affairs. Guest speakers.


PA 5132. Mediation Training. (3 cr. Prereq–Grad student or #) Creating an arena for mediation. Skills/expectations needed to mediate disputes between individuals, among groups: balanced (peer or colleague), imbalanced (power differentials). Role playing, group debriefing, critique. Cases.


PA 5190. Topics in Public and Nonprofit Leadership and Management. (1–3 cr. [max 9 cr. Prereq–Grad student or #) Selected topics.


PA 5203W. Geographical Perspectives on Planning. (4 cr. Gec 3605, Gec 5605. Prereq–Grad student or #) Includes additional weekly seminar-style meeting and bibliographic project on topic selected in consultation with instructor.

PA 5211. Introduction to Land Use Planning. (3 cr. Prereq—[course in spatial analysis or work experience demonstrating knowledge of field]; grad student) or #) Physical/spatial basis for community/regional development. Role of public sector in guiding private development processes. Issues in design of settlements. Applied case studies examine public regulatory frameworks.


PA 5221. Private Sector Development. (3 cr. Prereq–Grad student or #) Roles of various participants in land development. Investment objectives, effects of regulation. Overview of development process from private/public perspective.


PA 5241. Environmental Planning. (3 cr. Prereq–Grad student or #) Relationship between natural resources, ecology, and urban development; planning design principles in balancing these. Legal/regulatory context of environmental planning. Methods of environmental impact analysis.

PA 5251. Strategic Planning and Management. (1.5 cr. Prereq–Grad student or #) Theory/practice of strategic planning/management for governments, public agencies, and nonprofit organizations. How to promote strategic thinking/acting by policy-making bodies and management teams. Determining what an organization should do, how it should do it, and why. Lectures, case discussions.


PA 5253. Participatory Management and Public Involvement Strategies. (3 cr. Prereq–Grad student or #) Survey of strategies, techniques, and tools for involving groups members, teams, organizations, and stakeholders (including public at large) in problem definition, policy/plan formulation, decision making, and implementation. Emphasizes public/nonprofit organizations, citizen involvement.


PA 5290. Topics in Planning. (1–3 cr. [max 9 cr. Prereq–Grad student or #) Selected topics.


PA 5311. Program Evaluation. (3 cr. Prereq–Grad student or #) Principal methods, primary applications of evaluation research as applied to policies/programs in health/human services, education, or the environment. Conducting evaluations. Becoming a critical consumer of studies.

PA 5390. Topics in Advanced Policy Analysis Methods. (1–4 cr. [max 9 cr. Prereq–Grad student or #) Topics in advanced policy analysis methods.
PA 5421. Racial Inequality and Public Policy. (3 cr. Prereq–Grad student or #) Historical roots of racial inequality in American society. Contemporary economic consequences. Public policy responses to racial inequality. Emphasizes thinking/analysis that is critical of strategies offered for reducing racism and racial economic inequality.

PA 5431. Public Policies on Work and Pay. (3 cr. Prereq–[IPA 5031 or equiv], grad student) or #) Public policies affecting employment, hours of work, and institutions in labor markets. Public programs impacting wages, unemployment, training, collective bargaining, job security, and workplace governance. Policy implications of the changing nature of work.

PA 5441. Education Policy and the State Legislature. (3 cr. Prereq–Grad student or #) How Minnesota legislature decides K-12 issues. Implications for higher education. How to increase one’s influence in process. Discussions with persons who influence statewide educational policy. Presentations. Field trip to state legislature.

PA 5442. Policy Design for Education and Human Development. (3 cr. Prereq–Grad student or #) Designing effective educational policies. Using interdisciplinary approaches to identify/understand core variables (economic, psychological, etc.) Work on policy design.

PA 5490. Topics in Social Policy. (1-4 cr [max 9 cr]. Prereq–Grad student or #) Selected topics.


PA 5511. Community Economic Development. (3 cr. Prereq–Grad student or #) Contexts/motivations behind community economic development at national/regional levels. Alternative strategies for organizing/initiating economic development projects.

PA 5521. Development Planning and Policy Analysis. (4 cr. Prereq–[IPA 5031 or equiv], [5501 or equiv], grad student) or #) Techniques/assumptions of development planning and policy analysis at national, regional, and project levels. Direct/indirect effects of external shocks and government interventions on national/regional economies. Macroeconomic modeling, input-output analysis, social accounting matrices/multipliers, project appraisal/evaluation techniques.

PA 5522. Economic Development Policies in Latin America. (3 cr. Prereq–[IPA 5021 or equiv], [5502 or equiv], grad student) or #) Evolution of economic development policies from imperialism/industrialization policies of 1950s/1960s through beginning of reform in 1970s, economic crisis of 1980s, and reform into 1990s. Emphasizes privatization, economic integration, exchange rate/trade, and domestic/adjustment policies.

PA 5531. Strategies for Sustainable Development: Theory and Practice. (1.5 cr. Prereq–[Microeconomics course, grad student] or #) Economic, environmental, and social aspects of sustainable development. Strategies, methods of implementation, and applications of sustainable development in different economic systems of industrialized and developing countries. Special attention to countries in transition.

PA 5590. Topics in Economic and Community Development. (1-3 cr [max 9 cr]. Prereq–Grad student or #) Selected topics.


PA 5611. Feminist Economics. (1.5 cr. Prereq–[5021], grad student) or #) Feminist philosophy, methodology, and economic practice. Feminist perspectives on development and the global economy, work/family. Heterodox traditions in economics.

PA 5690. Topics in Women and Public Policy. (1-3 cr [max 9 cr]. Prereq–Grad student or #) Selected topics.


PA 5711. Science and Technology Policy. (3 cr. Prereq–Grad student or #) Effect of science/technology on global economy, politics, environment, security. Role of national science/technology policies in development, diffusion, and adoption of technologies nationally/internationally. Issues related to technology, technology policy, technological development, impact of technology, international cooperation.

PA 5721. Energy and Environmental Policy. (3 cr. Prereq–Grad student or #) Impact of energy production/consumption choices on environmental quality, sustainable development, and other economic/social goals. Emphasizes public policy choices for energy/environment, linkages between them.


PA 5790. Topics in Science, Technology, and Environmental Policy. (1-3 cr [max 9 cr]. Prereq–Grad or #) Selected topics.


PA 5811. Public Policy Problems of Globalization. (3 cr. Prereq–Grad student or #) Policy problems facing national and subnational decision makers. Problems caused by increasing international mobility of goods, services, capital, persons, and ideas.


PA 5890. Topics in Foreign Policy and International Affairs. (1-5 cr [max 9 cr]. Prereq–Grad student or #) Selected topics.

PA 5900. Computer Applications in Public Affairs (Summer). (5 cr [max 6 cr]; S-N only. Prereq–#) Introduction to basic computer systems/applications in public affairs practice (e.g., MS Windows, MS Word). Offered summer.

PA 5901. Computer Applications in Public Affairs. (5-6 cr. Prereq–Grad student) or #) Introduction to computer systems/applications in public affairs practice.

PA 5902. Computer Applications in Public Affairs. (5-6 cr [max 6 cr]; S-N only) Introduction to computer systems/applications in public affairs practice.

PA 5903. Introduction to Computers and Applications at the Humphrey Institute. (2 cr; A-F only. Prereq–International Humphrey Fellow) Computers/applications. Basic skills. Software such as MS Word, Excel, PowerPoint, Access. Using Internet, e-mail, search engines (for research), HTML (through Web page creation software).

PA 5931. Role of the Media in Public Affairs. (3 cr. Prereq–Grad student or #) Historical/contemporary role of news media in defining/shaping public opinion/policy, primarily in the United States. Emphasizes critical research professional skills in three forms of journalism: hard news coverage, investigative reporting, documentaries. Field experience, practice in governmental/public relations.

PA 5941. Leadership for the Common Good. (4 cr. Prereq–#) Personal, team, organizational, visionary, political, and ethical aspects of leadership. Emphasizes building/experiencing a learning community.

PA 5951. Global Commons Seminar. (3 cr [max 6 cr]; S-N only. Prereq–International Humphrey Fellow) Meets specific needs of International Humphrey Fellows. Topics vary each year depending on the interests and needs of the fellows.

PA 5990. Topics: Public Affairs—General Topics. (1-3 cr [max 9 cr]. Prereq–Grad student or #) General topics in public policy.
Course Descriptions

PubH 3040. Dying and Death in Contemporary Society: Implications for Intervention. (2 cr. Prereq: Health science major or social work major or education major or mortuary science major or #) Basic background information on concepts, attitudes, ethics, and lifestyle management in relation to dying, death, grief, and bereavement. Emphasizes intervention/educational aspects of society in community health and helping professionals for educators. 

PubH 3091. Practicum in Peer Education I. (2 cr; A-F only. Prereq—Upper div student with demonstrated hth sci or hth ed interests, 3001 or #3001 or 3004 or #3004, #) Multiple factors that influence health. Through various health promotion strategies, students build upon or gain skills such as public speaking, needs assessments, program planning, interpersonal communication, and program evaluation.

PubH 3092. Practicum in Peer Education II. (2 cr; A-F only. Prereq—Upper div student with demonstrated hth sci or hth ed interests, 3001 or #3001 or 3004 or #3004, #) Multiple factors that influence health. Through various health promotion strategies, students build upon or gain skills such as public speaking, needs assessments, program planning, interpersonal communication, and program evaluation.

PubH 3201. Issues in Environmental and Occupational Health. (3 cr. §5201) Scope of the field of environmental health. Concepts upon which environmental interventions are based. Consulting literature to identify appropriate interventions for community environmental health problems. Online course.


PubH 3801. Health Economics and Policy. (3 cr. Prereq—[Principles of microeconomics [AP Ec 1101 or Econ 1101], [Principles of macroeconomics [AP Ec 1102 or Econ 1202], or mathematical analysis [MATH 1340])]. Economics of health care markets. Problems faced by consumers and health care services. Builds on basic microeconomic principle of supply and demand for health, health care, health insurance, and role of government. Theoretical/empirical models/applications.


PubH 5005. Topics: Community Health Education. (1-4 cr [max 20 cr]. Prereq—#) Topics of interest in community health education.

PubH 5010. Public Health Interventions for AIDS. (3 cr. Prereq—Upper div or grad student or professional school student or #) Survey of public health approaches to AIDS epidemic. Epidemiological/clinical features of HIV infection. Impact of AIDS on certain communities/populations. Behavior change principles as they apply to AIDS interventions.

PubH 5017. Culture and Health Behavior. (2 cr. Prereq—Grad or professional school student or #) Healthcare in the context of public health practice and individual health behaviors. Cultural diversity and its impact on health behaviors; etc (universal) and emic (culture-specific) approaches.

PubH 5020. Fundamentals of Social and Behavioral Science. (3 cr. Prereq—Public health or #) Four major approaches to public health problems: psychosocial, economic, community, policy. Lectures provide overview of theory/implementation. Small groups provide opportunity to practice skills.

PubH 5030. Prevention of High-Risk Behavior Among Adolescents. (2 cr; A-F only. Prereq—[Grad-level behavioral sci course, CHE or MCH or PubH Nutr or Epi MPH or Epi grad]; or #; 2nd-yr master’s student recommended) Definitions/etiologic of high-risk behaviors among adolescents. Intervention programs. Review of current literature. Students design prevention program overview based on theory/etiologic data using health education/behavior change methods.

PubH 5034. Program Evaluation for Public Health Practice. (3 cr. Prereq—Che or MCH major or #) Developing useful program evaluations. Emphasizes program skills for program administrators, planners. Needs assessments, evaluability assessments, formative evaluation, implementation studies, outcome evaluations. Quantitative and qualitative data collection methods. Ethical considerations.

PubH 5035. Applied Research Methods. (3 cr. Prereq—[S041 or S045 or equiv], [S034 or S080 or equiv], [Che or pub hth nutr major or #; S420 recommended]) Complements master’s project’s work using forms, questionnaires, interviews. Literature searching, questionnaire development, scale construction, item analysis, data coding, entry/analysis, report writing. Use of computer software package to develop questionnaire and analyze data.

PubH 5040. Dying and Death in Contemporary Society: Implications for Intervention. (2 cr. Prereq—Upper div or grad student or professional school student or #) Concepts, attitudes, ethics, and lifestyle management related to dying, death, grief, and bereavement. Emphasizes intervention and educational aspects for community health and helping professionals and for educators.

PubH 5049. Legislative Advocacy Skills for Public Health. (3 cr. Prereq—Che major or #) State legislature as arena for public health practice; develops skills necessary to operate in that arena. Analyzes emergence, development, and resolution of legislative issues of public health importance.

PubH 5050. Community Health Theory and Practice I. (3 cr. Prereq—Che major or #) Socioenvironmental factors influencing health-related behavior. Role of groups, institutions, social structures in encouraging healthy, unhealthy behavior. Role of interventions affecting social environment; barriers to effective interventions. Individual behavior change theories, models targeting psychosocial approaches; application of theories in practice.

PubH 5051. Community Health Theory and Practice II. (3 cr. Prereq—Che major or #) Conceptualizing, planning, and implementing community health education programs and interventions. Examines health education/promotion organizations; how organizational factors shape health education practice. Focuses on planning health education/promotion efforts. Students gain experience in developing a hypothetical community health intervention.

PubH 5055. Social Inequalities in Health. (2 cr. Prereq—Hlth sci or soc work or public affairs grad student or #) Extent/causes of social inequalities in health. Degree to which understanding of these inequalities is hampered by methodological limitations in health research. Focuses on individual, community, and policy approaches to reducing social inequalities in health.


PubH 5074. Mass Communication and Public Health. (2 cr. Prereq—PubH MPH or grad student or #) Conceptualization, development of strategies for mass communication. Role of public health professionals in the mass communication process. Methods to measure effectiveness.

PubH 5075. Obesity and Eating Disorders. (2 cr. Prereq—Grad or prof school student or #) Theoretical, measurement, and prevalence. Social, behavioral, physiological causes. Health consequences. Treatment, prevention.

PubH 5078. Public Health Policy as a Prevention Strategy. (2 cr. Prereq—Che major or #) Philosophical, ethical, economic, political, efficacy rationale for policy approach to prevention. Historical/current approach of prevention policy to public health problems.

PubH 5080. Seminar: Policy, Politics, and Ethics of Public Health Decision Making. (2 cr; S-N only. Prereq—#2nd yr MPH or MS or PhD student in CHE or EPI MPH or PubH nutr or clin research] or public affairs, or MS/ID or PhD student] or #) Philosophy, and ethical factors that decision-makers must consider as public health policy is debated, adopted, and implemented. Role of public health professional in policy making. Focuses on current topics such as tobacco, privacy, genetics, and health care financing.

PubH 5091. Independent Study: Community Health Education. (1-4 cr [max 4 cr]. Prereq—CHE major, #) Independent study supervised by a community health education faculty member.

PubH 5094. Master's Project: Community Health Education. (1-6 cr [max 6 cr]. Prereq—Che major, #) Directed research towards completion of master’s project in community health education.

PubH 5096. Field Experience: Community Health Education. (1-6 cr [max 6 cr]; S-N only. Prereq—CHE major, #) Directed research towards completion of master’s project in community health education.

PubH 5100. Topics: Environmental and Occupational Health. (1-4 cr [max 20 cr]. Prereq—#) New course offerings or topics of interest in environmental and occupational health.

PubH 5101. Topics: Environmental and Occupational Health. (1-3 cr [max 5 cr]; S-N only. Prereq—EPI major, #) Supervised environmental health field study in health or public health setting under academic/professional supervision. Emphasizes application of acquired knowledge/skills to relevant issues/problems.

PubH 5103. Exposure to Environmental Hazards. (3 cr; A-F only. Prereq—EPI major or #) Nature, effects, regulation of exposure to biological, physical, chemical hazards in the environment, in context of inter/multi-disciplinary scientific field of environmental health as essential component of public health.
PubH 5104. Environmental Health Effects: Introduction to Toxicology. (2 cr; A-F only)
Identifying effects on human health of environmental agents. Chemical, biological, physical, and psychological agents.

PubH 5105. Environmental and Occupational Health Policy. (3 cr; A-F only. Prereq—EH major or #)
Students develop an understanding of environmental and occupational health policies, laws, key concepts and principles, proposals and approaches for regulatory reform, approaches to policy analysis, and overall phases and issues in the policy-making process.

PubH 5110. Environmental and Worker Protection Law. (4 cr)
Law protecting public health and conserving the environment: 1) common law that evolved as courts settled private disputes; 2) public law made by legislatures and administrative agencies. Students research legal issues underlying public health and environmental policies, analyze court opinions, review statutes, and participate in negotiation exercises.

PubH 5111. Preventing Pollution: Innovative Approaches to Environmental Management. (3 cr. Prereq—Pub hth or grad or honors undergrad student or #)
Interdisciplinary approach to pollution problems, including sustainability, pollution prevention, risk assessment, regulatory reform, and strategic environmental management.

PubH 5112. Risk Analysis: Application to Risk-Based Decision Making. (3 cr. Prereq—Pub hth or grad student or #)
Introduction to risk in context of regulatory decision making.

PubH 5113. Public Policy and Risk: Strategies for Effective Decisions and Discourse. (3 cr. Prereq—Pub hth or grad student or #)

PubH 5120. Injury Prevention in the Workplace, Community, and Home. (2 cr)
Injury epidemiology: analyses of major injury problems affecting the public in the workplace, community, and home using epidemiologic model and conceptual framework; emphasis on strategies/program development for prevention and control.

PubH 5121. Topics: Injury Prevention in the Workplace, Community, and Home. (1-2 cr [max 2 cr]. Prereq—[5120 or 5194], 5320, #)
Selected projects.

PubH 5122. Seminar: Safety in the Workplace. (1 cr)
Realin of and potential risk factors for occupational safety problems; strategies for prevention and control.

PubH 5123. Violence Prevention and Control: Theory, Research, and Application. (2 cr)
Analysis/critique of major theories and of epidemiologic research pertinent to violence, including characteristics of violence and relevant risk factors, reporting/treatment protocols, and current/potential intervention efforts and prevention initiatives. Emphasizes interdisciplinary contributions to violence prevention/control.

PubH 5130. Occupational Medicine: Principles and Practice. (3 cr. Prereq—EH major or #)

PubH 5140. Occupational and Environmental Epidemiology. (2 cr. Prereq—Basic course in [epi, biostats])
Principles/concepts in identifying health effects in workplace. Strategies for identifying excess risk, evaluating strengths/weaknesses of research techniques, assessing bias/confounding.

PubH 5150. Interdisciplinary Evaluation of Occupational Health and Safety Field Problems. (3 cr; Prereq—EH major or #)
Guided evaluation of potential health/safety problems at work site, recommendations and design criteria for correction/evaluation of occupational health/safety programs.

PubH 5160. Physiological Disposition of Xenobiotics. (3 cr; 1 course each in biochem, mol biol, org chem or #)
Pharmacokinetics/toxicokinetics and xenobiotic metabolism. Mechanisms by which phase I and phase II enzymes bioactivate and detoxify xenobiotics. Implications of these biochemical reactions for human health.

PubH 5161. Regulatory Toxicology. (2 cr; A-F only. Prereq—General environ toxicology course)
In-depth introduction to laws (and associated regulations) of U.S. federal regulatory agencies, such as CPSC, EPA, FDA, OSHA, and DOT, that require/use toxicological data/information in their mission of protecting human/occupational/environmental health.

PubH 5170. Introduction to Occupational Health and Safety. (3 cr. Prereq—Environmental health major or #)

PubH 5171. Properties, Behavior, and Measurement of Airborne Contaminants. (3 cr; A-F only. Prereq—[EH major, [industrial hygiene specialty or equiv] or #)

PubH 5172. Industrial Hygiene Applications. (2 cr. Prereq—[EH major, 5170 or #])
Recognition, evaluation, and control of occupational health/safety hazards. Practice application to specific industrial hygiene problems related to gases/vapors, aerosols, and physical agents.

PubH 5173. Hazard-Related Exposure to Physical Agents in the Environment. (3 cr. Prereq—[EH major, [industrial hygiene specialty or equiv] or #)
Nature, health effects, monitoring, and control of physical agents in working/living environments, ionizing/non-ionizing radiations (e.g., lasers/ultraviolet, visible, and infrared light), noise/vibration, heat/cold stress, Dose, response, and engineering interventions.

PubH 5174. Control of Exposure to Physical and Chemical Hazards. (3 cr. Prereq—[EH major, [industrial hygiene specialty or equiv] or #)
Hierarchy of options for controlling human exposures to airborne contaminants, both gaseous and aerosol. Science/practice of process control and exhaust ventilation in workplaces and other indoor air spaces and in air cleaning. Control of emissions to ambient environment.

PubH 5175. Industrial Hygiene Measurements Laboratory. (2 cr. Prereq—5171 or #)
Broad treatment of occupational health field. Role of industrial hygienist. Emphasizes practical application of industrial hygiene concepts/methods. Lectures/demonstrations, lab exercises, project.

PubH 5176. Hazardous Materials and Waste Management. (3 cr. Prereq—5170, courses in chemistry [including organic or equiv])
Generation, control, disposal of hazardous materials/wastes. Recognizing, evaluating, preventing hazards from chemicals that threaten occupational/environmental health. Lectures, case studies, workshops, field trips.

PubH 5180. Environmental Microbiology. (4 cr. Prereq—Micro 3103 or equiv or #)
Survival, dissemination, significance, and monitoring of microbes in human environment. Principles of biological safety, including risk assessment, lab design/operation, lab animals, shipping/transport, sterilization, disinfection, and decontamination.

PubH 5190. Environmental Chemistry. (3 cr. Prereq—1 course each in chem, enviro, mol biol, org chem or #)
Overview air, water, and soil chemistry; pertinent environmental problems; human and ecological multimedia exposures to chemicals in the environment.

PubH 5193. Directed Study: Environmental and Occupational Health. (1-3 cr [max 20 cr]; S only. Prereq—#)
Directed study in a topic agreed upon by student and faculty member.

PubH 5200. Environmental Health. (2 cr)
Principles of environmental health relating to macro- and micro-environments and to products consumed or used by people.

PubH 5201. Issues in Environmental and Occupational Health. (2 cr. Prereq—Pub hth student or #)
The field, current issues, principles/methods of environmental/occupational health practice.

PubH 5290. Topics: Public Health Practice. (1-4 cr [max 20 cr])
New course offerings or topics of interest in public health practice.

PubH 5294. Master's Project: Public Health Practice. (1-3 cr [max 3 cr]; S-N only. Prereq—[PHP or PHPE] major, #)
Directed field research. Original or secondary analysis of data sets related to public health practice.

PubH 5296. Field Experience: Public Health Practice. (1-3 cr [max 3 cr]; S-N only. Prereq—[PHP or PHPE] major, #)
Directed field experience or clinical rotation/practicum in selected community or public health agencies/institutions. Integration of knowledge/skills in population science for public health.

PubH 5299. Public Health Practice: Introductory Seminar for Health and Human Resources Professionals. (1 cr [max 3 cr]; S-N only. Prereq—Baccalaureate degree or degree from a health professional program or grad student in [dentistry or medicine or nursing or pharmacy or public health or veterinary medicine])
Science/art of public health. Emphasizes interdisciplinary linkages to practice communities. National/local priorities as outlined in “Healthy People 2010” serve as framework for presentations on current issues/trends by public health leaders.

PubH 5301. Perspectives: Interrelationships of People and Animals in Society Today. (2 cr. Prereq—5301, 5305, 5303, 5306)

PubH 5320. Fundamentals of Epidemiology. (3 cr. Prereq—Pub hth or grad student or #)
Basic concepts and knowledge of epidemiology, a methodology used to study the etiology, distribution, and control of diseases in human populations.

PubH 5330. Epidemiology I. (4 cr. Prereq—Epi major or #)
Basic epidemiologic principles applicable to infectious and noninfectious disease; host-agent environment complex; factors underlying spread of infectious disease; laboratory applications of statistical and epidemiologic methods.

PubH 5333. Principles of Human Behavior I. (2 cr; A-F only. Prereq—Che or epi major or #)
Theoretical perspective on etiology/modification of health behavior in individuals/communities.
PubH 5334. Human Behavior II. (2 cr; A-F only. Prereq—[5333, Epi grad student in behavioral track] or #) Critical evaluation of major behavioral public health intervention research. Experience in research designs/methods in health behavior intervention.

PubH 5355. Epidemiology and Control of Infectious Diseases. (2 cr. Prereq—Epi major or #) Principles and methods. Strategies for disease control and prevention and immunization. Relevance of modes of transmission of specific agents for disease spread and prevention. Public health consequences of infectious diseases at local, national, and international levels.

PubH 5336. Advanced Seminar in Infectious Disease Epidemiology. (1 cr. [max 2 cr] S-N only. Prereq—5330, 5335, #) How infectious disease epidemiologic principles are applied in the “real world” to contemporary or controversial issues, including development of prevention and control strategies.

PubH 5337. Analysis of Infectious Disease Data. (2 cr; A-F only. Prereq—5330, 5340, 5335, [Epi MPH or EPI grad student, #]) Methods for analyzing model infectious disease data. Emphasizes understanding of methods, statistical analysis specific to infectious disease areas. Infection models, surveillance/epidemic modeling, transmission models, pathogenis models.

PubH 5340. Epidemiology II. (4 cr. Prereq—5330.1 biostats course or #) Measures of disease occurrence; strategies and design principles for etiologic and evaluative studies. Measurement of problems, interactions, sensitivity and precision, validity, and need for data specification and control of variables.

PubH 5345. Epi Methods: Data Collection. (2 cr. Prereq—[5330, 5450, [Epi MPH or clin research student]] or #) Methods/techniques for collecting/managing epidi- mologic research data. Practical aspects of sampling, response rates/bias, forms design, selecting/ training interviewers. Data preparation, entry, cleaning, management. Ethical issues in research.

PubH 5348. Writing Research Grants. (2 cr; S-N only. Prereq—[5330, Epi MPH or EPI grad student, #]) Focuses on NIH-type grants. Mechanics of grant development/writing, principles of informed consent, budget development, grant-review process, and identifying funding sources.

PubH 5351. Molecular Epidemiology. (2 cr; A-F only. Prereq—5330 at least one college-level general biology course, [Epi MPH or Epi grad student or #]) Introduction to molecular epidemiology. Sample collection, processing, methodology. Biomarkers used in cancer, cardiovascular disease, and infectious epidemiologic studies.

PubH 5363. Design and Analysis of Group-Randomized Trials in Epidemiology. (3 cr. Prereq—5340, 5452, [EPI MPH or EPI grad student, #] Community, school-based, and work-site trials. Trials involving randomization of other identifiable groups to study conditions. Experimental/quasi-experimental designs and threats to their validity.

PubH 5365. Epidemiology of Aging. (2 cr. Prereq—Grad or professional school student, 5330 or equiv or #) Major concepts and issues. Emphasizes methodological issues unique to studies of older populations with measurement of epidemiologic characteristics especially important. Scope of epidemiologic studies of older populations; most prevalent health problems.

PubH 5370. Alcohol and Other Drugs: Epidemiology, Prevention, and Control. (3 cr. Prereq—Eth or epi grad major or pub hith or biol or dent or nurs grad or med school or pharm student or #) Population choosing whether users which drugs, why they use them, and health consequences of alcohol and other drug use. Does not focus on treatments, care, rehab, or exploration of personal attitudes, practices regarding alcohol or other drug use.

PubH 5379. Epidemiology Master’s Project Seminar. (1 cr; S-N only. Prereq—#) Seminar in Epidemiology MPH master’s project presentations. Students present their projects and give/receive feedback.


PubH 5386. Public Health Aspects of Cardiovascular Disease. (2 cr. Prereq—[5330, 5450] or equiv; students in 2-yr program take course in yr 1) Detailed perspective on well-established risk factors for CVD, prevention of CVD, and national recommendations for treatment/prevention. Introduces emerging risk factors and current controversies in CVD.

PubH 5387. Cancer Epidemiology. (2 cr. Prereq—5330, 5430, biol sci grad and professional school student or #) Epidemiologic aspects of cancer, including theories of carcinogenesis, incidence, site-specific risk factors, and issues of cancer control and prevention.

PubH 5389. Nutritional Epidemiology. (2 cr. Prereq—5330 or #) Study of nutrition/disease relationships through application of epidemiologic methods. Characteristics of diets related to food and nutrient intakes, biological basis for nutrition/disease relationships, studies of specific chronic diseases and nutritional intake, design and interpretation of studies using nutritional measures.

PubH 5396. Field Experience: Epidemiology. (1:4 cr. [max 4 cr; S-N only. Prereq—Epi grad student; #]) Supervised epidemiologic field study in health or public health setting under academic/professional supervision. Emphasizes application of acquired knowledge/skills to relevant issues/problems.

PubH 5399. Topics: Epidemiology. (1–4 cr. max 20 cr. Prereq—#) Topics of interest in epidemiology.


PubH 5452. Biostatistics II. (4 cr. Prereq—[5450, competence in SAS through 5420] or equiv or grade of at least B in [5414, 5415]) Two-way ANOVA, interactions, repeated measures, general linear models. Logistic regression for cohort and case-control studies. Loglinear models, contingency tables, Poisson regression, survival data, Kaplan-Meier methods, proportional hazards models.

PubH 5456. Prosemre for the Biostatistician. (2 cr. Prereq—5466, biostats major or #) Professional roles and responsibilities of the practicing biostatistician as consultant and collaborator in health sciences research.

PubH 5460. Introduction to Biostatistical Thinking. (1 cr. S-N only) Aspects of Biostatistics as practiced U of M and as described in research literature.

PubH 5462. Clinical Trials: Design, Implementation, and Analysis. (3 cr. Prereq—5452 or 5466 or #) Introduction to and methodology of randomized clinical trials: design issues, sample size, operational details, interim monitoring, data analysis issues, and overviews.

PubH 5465. Biostatistics: Regression. (4 cr. 5450, 5452, Prereq—[Stat 5101 or Stat 5102], biostats major or #) T-tests, confidence intervals, power, type I/II errors. Exploratory data analysis. Simple linear regression, regression in matrix notation, multiple regression, diagnostics. Ordinary least squares, violations, generalized least squares, nonlinear least squares regression. Introduction to General linear Model. SAS and S-Plus used.

PubH 5466. Biostatistics: ANOVA and Design. (4 cr. 5450, 5452, Prereq—5465, [Stat 5102 or Stat 5102), biostats major or #) Single factor ANOVA, diagnostics, classical non-parametric, multifactor ANOVA, multiple comparisons, power and sample size determination, calculating expected mean squares, random/mixed effects models. ANOVA in regression notation. Randomized block designs, nested designs, repeated measures designs, cross-over designs. SAS and S-Plus used.

PubH 5467. Analysis of Categorical Data. (3 cr. Prereq—[5466 or equiv], Stat 5102) Contingency tables, odds ratio, relative risk, chi-square tests, log-linear models, logistic regression, conditional logistic regression, Poisson regression, matching, generalized linear models for independent data. SAS/S-Plus used throughout.

PubH 5470. Topics: Biostatistics. (1–4 cr. max 20 cr. Prereq—#) Topics of interest in biostatistics.

PubH 5482. Latent Variable Models. (3 cr. Prereq—[5414, 5415] or [5450, 5452] or #) Introduction to use of statistical techniques known collectively as latent variable models. Exploratory/confirmatory factor analysis, path analysis, structural equation modeling, latent trait models, latent class models. SAS/AMOS software are used.

PubH 5483. Statistical Methods for Correlated Data. (3 cr. Prereq—[5420 or equiv or 5450 or 5452 or Stat 5303 or equiv], familiarity with matrix notation) or #) Correlated data arising from data collected over time or space, group randomizations, cluster sampling, nested designs, or random effects assumptions. Modeling, analysis, and interpretation appropriate for such data, for normally or non-normally (e.g. binary, Poisson, gamma) distributed outcomes. Computing using SAS software.

PubH 5494. Master’s Project: Biostatistics. (1–3 cr. max 3 cr. S-N only. Prereq—[5414 or grad student, #]) Directed research toward completion of Master’s or Plan B project in biostatistics.

PubH 5502. Clinical Research Literature Review Seminar. (1 cr. Prereq–Clinical research grad student or #) Students review clinical research literature, critique: hypotheses/goals, methodology of population selection, study design, subject measurement.

PubH 5503. Clinical Research Project Seminar. (2 cr. Prereq–5502; clinical research grad student, master's project or non-traditional social institution, or grad or student professional) Students present their project/thesis, give/receive feedback.

PubH 5510. Topics: Clinical Research. (1-4 cr [max 20 cr]. Prereq–#) Topics of interest in clinical research.

PubH 5550. Clinical Research: Introductory Seminar for Health Professionals. (2 cr. Prereq–Bachelor's degree or degree from health professional program or grad student in [dentistry or medicine or nursing or pharmacy or public health or veterinary medicine]], #) Design/implementation of clinical research protocols. IRB, FDA, other regulations. Practical tools for survey management. Taught by Clinical Research graduate faculty and guest lecturers.


PubH 5593. Directed Study: Clinical Research. (1-4 cr [max 4 cr]. Prereq–CR grad student, #) Directed research or field practice in clinical research.

PubH 5605. Reproductive and Perinatal Health. (2 cr. A-F only. Prereq–Pub hth or grad student or #) Issues, programs, services, and policies: Social, cultural, psychological, physiologic, environmental, economic, and political factors that affect reproductive health, pregnancy, and childbearing.

PubH 5606. Health of Children. (2 cr. Prereq–Pub hth or grad student or #) Overview of public health issues related to children in the United States. Focus on identifying and planning effective public health strategies, policies, and programs to improve the health of infants and children.


PubH 5610. Principles of Maternal and Child Health. (2 cr. Prereq–Pub hth or grad student or #) For MCH students and others interested in learning about the needs of children and families. Examines MCH activities in the context of “Healthy People 2000,” including the history and organization of programs, policies, and advocacy activities.

PubH 5613. Chronic Illness and Disability in Childhood: Principles, Programs, and Policies. (2 cr. Prereq–Pub hth or grad student or #) Principles, policies, programs, and practices for identifying and meeting the needs of children and adolescents with chronic health conditions and of their families. Skills emphasized: needs assessment, program development/evaluation, family empowerment, interagency collaboration, team building, integrated/coordinate service delivery, advocacy.


PubH 5628. Seminar: Race, Class, and Family Formation. (1 cr; S-N only. Prereq–Public health student or grad student or #) Impact of race/class on family formation, family dynamics, and family resiliency/maintenance.

Explores whether traditional approaches in family intervention are effective among individuals who are not engaged in traditional social institutions.

PubH 5634. Advocating for Change for Children. (2 cr. Prereq–Pub hth grad student or #) Strategies for changing systems, building skills in policy research, information/behaviour management, coalition building, personal persuasion, advocacy.

PubH 5639. Prevention: Theory, Practice, and Application in Public Health Service. (3 cr. Prereq–Jr or sr or grad student or professional school student) Current issues/controversies around prevention and how it relates to health services. History of prevention as a paradigm and lifestyle intervention. Programs and legislative issues. Education, roles/implications for societal action.


PubH 5654. Adolescent Sexual Identity: Teen Risk and Professional Responsibility. (1 cr. Prereq–Professional in pub hth or medicine or ed or psychology or social work or counseling or youth service) Issues that gay, lesbian, and bisexual adolescents and their families face in coming to terms with sexual orientation. Helpful ways to work with this hidden population and their families. One-day workshop.

PubH 5655. Sexual Orientation Issues for Adolescents. (2 cr. Prereq–Baccalaureate degree or employment in ed or hth or soc service field) Adolescent sexual orientation from perspective of individual identity: impact of the community and response of the community toward gay, lesbian, bisexual, and transgender youth, and interventions/roles of professionals in the school and community.


PubH 5673. Grant Writing for Public Health. (1 cr. Prereq–MCH or MPH or EPI MPH or #) Hands-on workshop. Focuses on children, youth, and families. Identifying successful elements of a grant application. Grant review process. Critiquing a grant. Writing an application.


PubH 5694. Master's Project: Maternal and Child Health. (2-4 cr [max 4 cr]. S-N only. Prereq–MCH major, #) Directed research toward completion of the master's project in maternal child health.

PubH 5696. Field Experience: Maternal and Child Health. (2-4 cr [max 4 cr]. S-N only. Prereq–MCH major, #) Supervised maternal/child field study in health or public health setting under academic/professional supervision. Emphasizes application of acquired knowledge/skills to relevant issues/problems.

PubH 5700. Foundations of Public Health Administration. (3 cr. Prereq–PHA major or #) Organization of public health, predominantly in the United States. Role of public health administration. Problem-solving skills necessary for effective administration.

PubH 5705. Community Health Assessment. (2 cr. Prereq–Grad-level epidemiology course, [public health or grad student] or #) Two of three core functions of public health: health assessment, assurance. Lectures, group activities, individual presentations.

PubH 5708. Analysis of Administrative Data. (3 cr. Prereq–Public health or grad student or #) How to use data for various types of research designs. Origin, quality, strengths, limitations of data. Files based on Medicare/Medicaid data are used for hands-on learning. Emphasizes broad concepts/skills.


PubH 5717. Decision-Making Under Uncertainty. (2 cr. Prereq–Pub or grad student or #) Introduction to theory/application of decision analysis. Focuses on normative (as opposed to descriptive) modeling of decision-making under uncertainty.

PubH 5721. Managing Collaborative Networks. (2 cr. Prereq–Grad student or professional school student or #) How to manage inter-organizational networks to coordinate provider organizations for associations and rural health networks.


PubH 5740. Organizational Behavior. (2 cr. Prereq–Pub hth or grad student or #) Human behavior in organizations; motivation, leadership, influence of organizational structure, informal group behavior, interpersonal relations, supervision. Preventing and solving problems among individuals and groups in organizations.


PubH 5751. Principles of Management in Health Services Organizations. (2 cr. Prereq–[Grad or professional school student] Student role of health-care services administrators, principles of management, administrative process. Lectures, case studies.

PubH 5752. Public Health Management. (3 cr. Prereq–Grad or professional school student or #) Managing projects/organizations in public health. Skills/knowledge necessary to determine mission of an organization, structure it to support individuals in their work, and motivate/manage to achieve goals.

PubH 5760. Healthcare Financial Management: Public Sector Emphasis. (2 cr. Prereq–Grad student or professional school student or #) Theory of managerial/financial accounting and of healthcare finance as they relate to program development for non-profit organizations.
Emphasizes methods whereby programmatic goals/ objectives can be integrated into financial planning, budget preparation, and budget control. Examining an overall program through financial analytical techniques.


PubH 5762. Health Finance Applications. (2 cr. Prereq—5761, grad student or professional school student or #) Top management perspective of healthcare financial management responsibility in context of strategic issues. Emphasizes balancing theory and applications. Capstone course.

PubH 5780. Topics: Public Health Administration. (1-4 cr max) (Prereq—5761) Topics of interest in public health administration.

PubH 5791. Independent Study: Public Health Administration. (1-4 cr max 4 cr) Prereq—PubH 5761, major, #) Independent study supervised by a public health administration faculty member.

PubH 5794. Master's Project: Public Health Administration. (3 cr; S-N only. Prereq—PubH 5761, major, #) Students work independently to complete one of three types of master’s projects: research project, critical literature review, or applied field project.

PubH 5796. Field Experience: Public Health Administration. (3 cr; S-N only.) Prereq—PubH 5761, major, #) Supervised practical experience in field study in health or public health setting under academic/professional supervision. Emphasizes application of acquired knowledge/skills to relevant issues/problems.


PubH 5806. Principles of Public Health Research. (2 cr. Prereq—Pub Hlh nutr major or grad or professional school student or #) Evaluation of public health research literature and planning for independent research projects. Formulation of research question, research design, sampling techniques, use of research concepts, and data analysis. Data collection techniques, including questionnaires, interviews, and data analysis.


PubH 5832. Economics of the Health Care System. (3 cr; A-F only. Prereq—Microecon theory course or #) Economic analysis of U.S. health-care sector. Emphasizes problems of pricing, production, and distribution. Health-care services as factor contributing to nation’s health.

PubH 5835. Health Services Policy. (2 cr. Prereq—Pub Hlh nutr major or [HSRPA or MHA or PA] grad student or #) Social, political, and economic context within which U.S. health-care system developed. Influence of these contextual elements on public policies guiding/regulating organization/delivery of health services.

PubH 5852. Program Evaluation in Health and Mental Health Settings. (3 cr. Prereq—#) Overview of evaluation, models of evaluation, objectives of an evaluative study, sampling of subjects, methods of data collection, methodological designs, interpretation of data, preparation of final report, and ethical and political considerations.

PubH 5861. Health Insurance. (2 cr; A-F only. Prereq—Microecon theory course or #) Financing personal health care: theory of insurance, health insurance markets, cost sharing, HMOs, PPOs, public and catastrophic health insurance, and the uninsured. Emphasis on public policy.


PubH 5863. Understanding Health-Care Quality. (2 cr) Introduction to assessing and assuring quality of care. Emphasizes both process and outcomes approaches, paralleling interest in the appropriateness and effectiveness of care. Issues around creating needed behavioral changes.

PubH 5864. Conducting Health Outcomes Research. (3 cr Prereq—Intro cr in [epidemiology or health services research methods] or #) Major concepts/principles in conducting health outcomes research that evaluates medical care. Developing study designs matched to research questions. Frequently used study designs. Evaluating health outcomes. Analytical approaches.

PubH 5881. Topics: Health Services Research and Policy. (1-4 cr max 20 cr) Prereq—#) Topics of interest in health services research/policy.


PubH 5902. Maternal and Infant Nutrition. (2 cr. Prereq—3000 nutr course or equiv or #) Nutritional needs of childbearing women and of infants. How to meet these needs through programs/services.

PubH 5905. Human Nutrition and Health. (2 cr. Prereq— Jr or Sr or grad or professional school student) Broadspectrum of nutrition topics of contemporary interest. Concepts and facts about science of human nutrition in relation to personal and community nutrition problems and concerns. Applied, introductory graduate-level course with labs.

PubH 5907. Assessment of Dietary Intake. (1 cr. Prereq—Pub Hlh nutr major or #) Methods for assessing dietary intake of populations and individuals; appropriate uses of dietary assessment methods in public health, clinical, and research settings; evaluation and interpretation of dietary data.

PubH 5908. Anthropometric Assessment of Nutritional Status. (1 cr Prereq—5450 or 5414 or equiv, grad or prof in radiol school student) Anthropometry as used to assess nutritional status: training and experience in taking basic measurements; practical experience in anthropometry; conceptual understandings and interpretation of anthropometric data.


PubH 5910. Critical Review of Research in Public Health Nutrition. (1 cr Prereq—Pub Hlh nutr or mch major grad-level course each in research, biostats, epi or #) Applying principles of nutrition, epidemiology, and biostatistics to evaluate scientific research on topics of significance in public health nutrition. Interactive seminar format with lecture, discussion, and student presentations.

PubH 5911. Biochemical Assessment. (1 cr Prereq—Grad or professional school student, 5450 or 5414 or equiv or #) Use of biochemical measurements for evaluation of nutritional status. Biochemical measurement methods, data analysis, and application of reference data; protein, vitamin, and mineral status.

PubH 5914. Community Nutrition Intervention. (3 cr Prereq—Grad or professional school student or #) Nutrition intervention strategies used in health programs. Selecting appropriate strategies, applying them to specific target audiences, and evaluating their usefulness in relation to program objectives.

PubH 5932. Nutrition: Adults and the Elderly. (2 cr. Prereq—#) Current literature and research on nutrition needs and factors affecting nutritional status of adults and the elderly.

PubH 5933. Nutrition: Health/Disease Relationships. (2 cr; A-F only. Prereq—Grad or professional school student or #) Issues in nutrition and public health; biological and epidemiologic bases for public health dietary recommendations. Relation of nutrition to heart disease, cancer, hypertension, obesity, and other conditions.

PubH 5935. Child and Adolescent Nutrition. (2 cr. Prereq—Grad or professional school student or #) Current issues and literature. Major nutrition issues of youth; biological, cultural, and psycho-social factors influencing food behaviors; and strategies for improving nutritional health.


PubH 5996. Field Experience: Public Health Nutrition. (1-6 cr max 6 cr; S-N only Prereq—PubH Nut major) Supervised public health nutrition field study in health or public health setting under academic/professional supervision. Emphasizes application of acquired knowledge/skills to relevant issues/problems.

Radiation Therapy Technology (RTT)

College of Continuing Education


RTT 3001. Radiation Therapy: Introduction to Radiation Therapy. (1 cr; A-F only) Basic overview of radiation therapy and its role in medicine.

RTT 3100. Radiation Therapy: Mathematics. (2 cr; A-F only) Basic arithmetic, algebra, geometry, and trigonometry.
Rec 2151. Outdoor and Camp Leadership. (3 cr; A-F only) Practical and theoretical study of leading groups in outdoor and camp settings. Outdoor leadership skills, expedition planning, emergency procedures and risk management, minimum impact approaches, and working with youth in a camp environment.

Rec 3281. Research and Evaluation in Recreation, Park, and Leisure Studies. (4 cr; A-F only. Prereq–1501 or #) Basic techniques; emphasis on social research and evaluation methodology; survey of present status of recreation and park research and evaluation.

Rec 3541W. Recreation Programming. (3 cr; A-F only. Prereq–1501 or #, rec major) Various methods, skills, materials needed for planning, developing, implementing, evaluating professional recreation programs for diverse populations in various settings.

Rec 3551. Administration and Finance of Leisure Services. (4 cr; A-F only. Prereq–3541 or #) Principles and practices of financing and managing leisure service agencies in the public and private sector.

Rec 3601W. Leisure and Human Development. (3 cr) Exploration of the roles concerning many persons of leisure in human development from influence on healthy fetal development to viability until death. Examination of diverse, multicultural perspectives on leisure, its centrality throughout history and influence on how civilizations define themselves.

Rec 3796. Senior Internship in Recreation, Park, and Leisure Studies. (1-12 cr [max 12 cr]; S-N only. Prereq–Rec Jr or Sr) Supervised field experience for pre-professional students in selected agencies.

Rec 3993. Directed Study in Recreation, Park, and Leisure Studies. (1-9 cr [max 24 cr]; A-F only) Special interest topics; independent study.

Rec 5101. Foundations of Recreation. (3 cr; A-F only. Prereq–MED or grad student or #) Theories/techniques in administering/managing sport and leisure service agencies in the public and private sector.

Rec 5215. Assess and Monitor Patient/Client Functioning in Recreation Therapy. (3 cr; A-F only. Prereq–TR major or academic health professional or #) Selecting appropriate techniques/tools, analysis of individual p/c supports/deficits. Monitoring/ recording progress in RT and in collaborative services; standard notes; team meetings; on-line reporting for quality assurance, referral, augmentation/termination of services.

Rec 5221W. Comprehensive Therapeutic Recreation Services Development and Management. (4 cr. Prereq–Pre-R 5211 or #, rec major) Guided development of written plans including development of protocols and critical pathways, intervention programs/activities, individual treatment plans and standards for appropriate placement of individuals in group intervention, and management of patient/client service delivery, record keeping, and administrative responsibilities.

Rec 5231. Therapeutic Recreation and Diagnostic Groups. (3 cr; A-F only. Prereq–5211 or #) Definitions, philosophies, methodologies regarding therapeutic recreation services for persons in diagnostic groups of cognitive, physical, sensory, communication, and psychiatric impairments/disabilities. Lectures, discussions, presentations by parents, professionals, and self-advocates. Clinical or community practicum assignment.

Rec 5241. Functional Intervention: Recreation Therapy in Geriatric Care. (3 cr; A-F only. Prereq–5211 or #) Role of leisure in maintenance of mental, physical, social-emotional health/functioning. Issues relative to prevention of impairment/disability. Rehabilitation, support of vital life involvement, effect on design/delivery of recreation services.

Rec 5271. Community Leisure Services for Persons With Disabilities. (3 cr; A-F only. Prereq–5101, rec major, or #) Exploration and application of concepts and techniques of normalization and least restrictive environment strategies to leisure service delivery in inclusive community settings for a range of individuals with disabilities.

Rec 5288. Grant Writing in Human Services. (3 cr; A-F only) Identify, develop, and procure financial assistance for programs in human services, including education, recreation, and social programs. Skills and strategies for preparing and evaluating competitive proposals for grant support through federal agencies and private foundations or corporations.

Rec 5301. Wilderness and Adventure Education. (4 cr; A-F only) Rationale for, methods in applying wilderness/adventure education programs in education, recreation, corporate, human service settings. Emphasizes adventure/wilderness program management.

Rec 5311. Programming Outdoor and Environmental Education. (3 cr; A-F only) Methods, materials, and settings for developing and conducting environmental and outdoor education programs.

Rec 5421. Sport Finance. (3 cr; A-F only. Prereq–Grad student, #) Introduction to financial analysis in sport. Cash flow statements, budgeting issues, traditional/innovative revenue producing strategies available to sport organizations. Discussion, practical analysis of current market.

Rec 5461. Foundations of Sport Management. (3 cr; A-F only. Prereq–[Rec or Kin] student or #) Theories/techniques in administrating/managing sport enterprises. Organizational theory/policy. Practical examples of sport management skills/strategies.

Rec 5511. Women in Sport and Leisure. (3 cr; A-F only. Kin 5511) Critically examines women’s involvement in/contributions to sport, physical activity, and leisure.

**Recreation, Park, and Leisure Studies (Rec)**

**School of Kinesiology**

**College of Education and Human Development**

Rec 1501. Orientation to Leisure and Recreation. (3 cr) Introduction to the history and development of the parks and recreation movement; sociological, economical, psychological, and political considerations of leisure and recreation in contemporary society; interrelationship between professional and service organizations; orientation to the professional field.
Religions in Antiquity (RelA)

**Department of Classical and Near Eastern Studies**

**College of Liberal Arts**

RelA 1001. Introduction to the Religions of the World. (3 cr)
An introduction to the major religions of the world and the academic study of religion. Hinduism, Buddhism, Judaism, Christianity, Islam, and some pre-Christian religions of antiquity.

RelA 1031. Introduction to the Religions of South Asia. (3 cr)
Historical study of the three traditional religions of India: Hinduism, Buddhism, and Jainism through literature, art, and film. General topics include myth, yoga, mysticism, and the religious order of society.

RelA 1034. Introduction to Judaism. (3 cr; §3034, §JWst 3034, §JWst 3043. Prereq—No knowledge of Hebrew required)
Survey of intellectual history, literature, beliefs, practices, values, laws, national, and cultural developments from the rabbinic period through today. Ancient and modern sources used to study Judaism. Combines Western critical methodologies with the Jewish traditions of learning.

RelA 1035. Introduction to Christianity. (3 cr; A-F only)

RelA 1082. Jesus in History. (3 cr; §1182)
Jesus of Nazareth in his original setting. Modern approaches to the historical Jesus. Perspectives and needs of early gospel writers and effects of portrayals of Jesus. Shifting representations of Jesus in new historical and cultural situations. Meets with RelA 1182.

RelA 1082H. Honors Course: Jesus in History. (3 cr; §1082B)

RelA 1083. Jesus the Jew. (3 cr; §3083)

RelA 3013W. Biblical Law and Jewish Ethics. (3 cr; §5031, §JWst 3031, §JWst 3034)

RelA 3034. Introduction to Judaism. (3 cr; §3034, §JWst 3034, §JWst 3034. Prereq—No knowledge of Hebrew required)
Survey of intellectual history, literature, beliefs, practices, values, laws, national, and cultural developments from the rabbinic period through today. Ancient and modern sources used to study Judaism. Combines Western critical methodologies with the Jewish traditions of learning.

RelA 3035. Introduction to Christianity. (3 cr; A-F only §1035)

RelA 3036. Islam: Religion and Culture. (3 cr)
Islam of faith, practices, sectarian splintering, expansion outside original home to status of world religion, institutions, status in world societies—Asia, Europe, Americas.

RelA 3070. Topics in Ancient Religion. (3 cr)
Study of a specific aspect of religion in antiquity, such as healing cults, magic and divination, Gnosticism, or prophecy and authority. Topics vary by instructor and from year to year. Topics specified in Class Schedule.

RelA 3071. Greek and Hellenistic Religions. (3 cr; §3171)
Greek religion from the Bronze Age to Hellenistic times. Sources include literature, art, archaeology. Homer and Olympian deities; ritual performance; prayer and sacrifice; temple architecture; death and the afterlife; mystery cults; philosophical religion. Near Eastern salvation religions. Meets with 3171.

RelA 3071H. Honors: Greek and Hellenistic Religions. (3 cr; §3171)
Greek religion from Bronze Age to Hellenistic times. Sources include literature, art, archaeology. Homer/ Olympian deities, ritual performance, prayer/sacrifice, temple architecture, death/afterlife, mystery cults, philosophical religion, Near Eastern salvation religions. Meets with 3071.

RelA 3072. The New Testament. (3 cr)
Early Jesus movement in its cultural and historical setting: origins in Judaism; traditions about Jesus; Paul, his controversies/interpreters; questions of authority, religious practice, structure; emergence of the canon of scripture. Contemporary methods of New Testament study.

RelA 3072H. Honors Course: The New Testament. (4 cr; §3072, §3172, §Clas 3172, §Clas 3072. Prereq—Honors)

RelA 3073. Roman Religion and Early Christianity. (3 cr)

RelA 3083. Jesus the Jew. (3 cr; §3083, §Clas 1083, §JWst 3083, §JWst 3083)

RelA 3088. Archaeology in Biblical Lands I: Old Testament. (3 cr)

RelA 3089. Archaeology in Biblical Lands II: New Testament Period. (3 cr)

For definitions of course numbers, symbols, and abbreviations, see page 296.
RelA 3112. Jewish Mysticism, Magic, and Kabbalah. (3 cr; A-F only)
Mythical traditions from early rabbinc traditions to Zohar (Book of Splendor) in 13th century. Literature of heavenly ascent (Hechalot, Merkavah), Book of Creation (Sefer Yetzirah), precursors of Zohar—the Bahir. Schools of Provence, Gerona, and Zohar. Temporal and thematic aspects, magical-therapeutic techniques, evolution of doctrine of Sefirot, mystical interpretation of Scripture, erotic dimension.

RelA 3115. Mishnah and Midrash in Translation. (3 cr)
Jewish law studied as a mirror of society and as a way to actualize its value. Consideration of original socioreligious contexts and current applications. Selections include biblical interpretations addressing moral, theological, legal, and literary problems.

RelA 3126. Judaism in the Modern World. (3 cr; §JwSt 3126)

RelA 3173. Honors Course: Roman Religion and Early Christianity. (4 cr)

RelA 3201. The Bible: Narrative Texts. (3 cr; Prereq—Knowledge of Hebrew not required)

RelA 3202. The Bible: Prophecy. (3 cr; Prereq—Knowledge of Hebrew not required)

RelA 3203. The Bible: Wisdom, Poetry, and Apocalyptic. (3 cr; Prereq—Knowledge of Hebrew not required)

RelA 3251. Modern Study of the Old Testament. (3 cr; Prereq—No knowledge of Hebrew required)
Methods used in studying the Old Testament, including textual criticism, the anthropological approach, the sociological history, and the use of archaeology in interpreting the text.

RelA 3501. Ancient Israel: The Origins of Israel in Biblical Traditions. (3 cr; Prereq—Hebrew not required)

RelA 3502. Ancient Israel: From Conquest to Exile. (3 cr; Prereq—Hebrew not required)
Israelite history in context of what is known from Egyptian, Canaanite, Mesopotamian sources. Focuses on issues raised by archaeological data related to Israelite conquest of Canaan.

RelA 3503. History and Development of Israelite Religion I. (3 cr; §5503)
Prereq—No knowledge of Hebrew required
Survey of the evolution of Israelite religion. Cultic practices, law and religion, prophecy, religion and historiography. Relationship to surrounding religious systems.

RelA 3504. Development of Israelite Religion II. (3 cr)
Ancient Judaisms from the Persian restoration (520 B.C.E.) to Roman times (second century CE). Religious, cultural, and historical developments are examined to understand Jewish life, work, and worship under a succession of foreign empires: Persian, Greek, and Roman.

RelA 3503. Directed Studies. (2-4 cr; max 10 cr)
Prereq—A
Student works with faculty on a subject decided upon by both.

RelA 5013. Biblical Law and Jewish Ethics. (3 cr; §5013, §JwSt 3123, §JwSt 5013)

RelA 5070. Topics in Ancient Religion. (3 cr; Prereq—RelA 3071 or 3072 or 3073 or 5071 or 5073 or any RelS course or #)
Study of a specific aspect of religion in Classical and Near Eastern antiquity such as healing cults, magic and divination, and theurgy and authority. Topics specified in Class Schedule.

RelA 5071. Greek and Hellenistic Religions. (3 cr; §5071, §5171)
Greek religion from the Bronze Age to Hellenistic times. Sources include literature, art, and archaeology. Homer and the Olympic deities; ritual performance; prayer and sacrifice; temple architecture; oracles; death and the afterlife; mystery cults; philosophy in the Near Eastern salvation religions. Meets with 3071.

RelA 5072. The New Testament. (3 cr; §3072, §3172)

RelA 5073. Roman Religion and Early Christianity. (3 cr; §3073)

RelA 5080. New Testament Proseminar. (3 cr; Prereq—RelA 1082 or 3072 or equiv)

RelA 5088. Archaeology in Biblical Lands I: Old Testament Period. (3 cr; §5088)

RelA 5089. Archaeology in Biblical Lands II: New Testament Period. (3 cr; §5089)

RelA 5112. Jewish Mysticism, Magic, and Kabbalah. (3 cr; A-F only)
Mythical traditions from early rabbinc traditions to Zohar (Book of Splendor) in 13th century. Literature of heavenly ascent (Hechalot, Merkavah), Book of Creation (Sefer Yetzirah), precursors of Zohar—the Bahir. Schools of Provence, Gerona, and Zohar. Tension between legal/mystical aspects, magical-therapeutic techniques, evolution of doctrine of Sefirot, mystical interpretation of Scripture, erotic dimension.

RelA 5221. Archaeology of Herodian Israel. (3 cr; A-F only)
Prereq—One course in [archaeology or ancient history] or grad student
Archaeological sites in Israel dating to era of Herod the Great (37-4BC). Palaces, religious edifices, and remains from Jewish/gentile settlements throughout the kingdom. Course readings consist of contemporary literary sources and excavation reports.

RelA 5303. History and Development of Israelite Religion I. (3 cr; §5303)
Survey of the evolution of Israelite religion. Cultic practices, law and religion, prophecy, religion and historiography. Relationship to surrounding religious systems.

RelA 5504. Development of Israelite Religion II. (3 cr)
Ancient Judaism from the Persian restoration (520 B.C.E.) to Roman times (second century C.E.). Religious, cultural, and historical developments are examined to understand Jewish life, work, and worship under a succession of foreign empires: Persian, Greek, Roman.

RelA 5513. Scripture and Interpretation. (3 cr; A-F only)
Prereq—§JwSt 5513
Idea of divine revelation, its impact upon religion/ literature. How history of Bible’s creation, transmission, and interpretation helps us think critically about role of idea of revelation in history of religious traditions. What is revelation? How does belief that a text is revealed affect the way it is read within the community for which it constitutes revelation?

RelA 5993. Directed Studies. (2-4 cr; max 10 cr)
Guided individual reading or study.

Religious Studies (RelS)

Department of Classical and Near Eastern Studies

College of Liberal Arts

RelS 3070. Topics in Religious Studies. (1-4 cr; A-F only)
Topics specified in Class Schedule and Course Guide.

RelS 3521W. History of the Holocaust. (3 cr)
Study of the 1933-1945 extermination of six million Jews and others by Nazi Germany on the basis of race, European anti-Semitism, social Darwinism and race theory, perpetrators, victims, onlookers, resistance, and theological responses of Jews and Christians.

RelS 5111. Problems in Historiography and Representation of the Holocaust. (3 cr; Prereq—RelS 3070 or 3521W)
An advanced course focusing on issues connected with the Holocaust. Inclusiveness of other groups, Holocaust versus “Shoah,” historiographical conflicts about perpetrators, an examination of the problems of representation in literature and art, problems of narrative theology after Auschwitz.

RelS 5251. Archaeology of Herodian Israel. (3 cr; A-F only)
Prereq—One course in [archaeology or ancient history] or grad student
Archaeological sites in Israel dating to era of Herod the Great (37-4BC). Palaces, religious edifices, and remains from Jewish/gentile settlements throughout the kingdom.
the kingdom. Course readings consist of contemporary literary sources and excavation reports.

Ref 5993. Directed Studies. (1-4 cr; max 24 cr) Directed studies in religion. Credits may vary from term to term to a limit of nine.

**Rhetoric (Rhet)**

**Department of Rhetoric**

**College of Agricultural, Food and Environmental Sciences**

**Rhet 1001. Introduction to Scientific and Technical Communication.**

(2 cr; S-N only) Research origins/history. Defining technical communication in professional world. Focuses on audience, purpose, ethics, global communication, and collaboration. Journal articles, student/professional organizations, guest presentations, interviews. Career assessment inventories, in-class/electronic discussions, oral presentations, feasibility report.

**Rhet 1101. Writing to Inform, Convince, and Persuade.**

(4 cr; A-F only) Writing effectively in an academic setting. Emphasis on analyzing and creating logical arguments; standards of clarity, cohesiveness, and correctness. Readings and discussion of issues related to increasing cultural diversity in the United States.

**Rhet 1152W. Writing on Issues of Science and Technology.**

(4 cr; A-F only. Prereq—Exemption from 1101 or equiv) Ethical, social, and political challenges created by science/technology. Analyses persuasion strategies through which experts, political decision-makers, and citizens meet these challenges. Bioscience controversies such as cloning, organ transplantation. Controversies over pollution, ozone depletion.

**Rhet 1223. Oral Presentations in Professional Settings.**

(3 cr; A-F only) Techniques for analyzing an audience, determining a purpose, developing an argument, and delivering a presentation. Emphasis on using presentations and basic communication theories.


(3 cr) Relationship of religion and science as ways of explaining human nature and behavior. Focus on 19th century; impact of Darwin’s theory and historical study of Biblical texts. Existentialist strategies and political ecology as modern efforts that problematize “human nature.”

**Rhet 1311. The Family in American Experience.**

(3 cr) The American family as portrayed in fiction, poetry, drama, and autobiography. Introduction to literature both as artistic and as ideological construct. Analysis of the social critique of American family life.

**Rhet 1315. The Land in American Experience.**

(3 cr) Land in America as idea and as actual space. History of cultural values and the meanings land holds for us. Contrasting views of land, especially those of certain Native American peoples. Rise of the conservation movement and the urbanization of U.S. space.

**Rhet 1381W. Fictional History: 20th Century Through the Eyes of Novelist.**

(4 cr) Analysis of selected 20th-century documentary novels; discussion of major themes. Emphasis on artistic truth in relation to historical truth; cross-cultural comparisons of responses to the impact of Anglo-American policies.

**Rhet 1385. Contemporary Arts (a.k.a. Arts in the Twin Cities and Beyond).**

(3 cr) Visual and performing arts in the Twin Cities: art museums and galleries, theaters, and concert halls. One weekly lecture with a lab for contemporary arts events. Optional practicum—a trip to New York City.

**Rhet 3101. Functional Photography.**

(3 cr; A-F only. Prereq—3562 or DHA 1300) Basic photographic communication with emphasis on techniques of producing 35mm color transparencies for use in presentations and publications. Students provide their own camera and film.

**Rhet 3108W. Gender and the Rhetoric of Science and Technology.**

(4 cr) How cultural gender roles are affected by science/technology. Influence of gender roles on scientific/technological thinking (e.g., communication strategies, language, image). Values/goals of past present scientific/technological communities.

**Rhet 3221W. Theories of Human Communication.**

(4 cr) Through lecture, discussion, simulations, and small group work students become familiar with theories and practices of interpersonal, small group, organizational, and scientific, and technical communication.

**Rhet 3257. Scientific and Technical Presentations.**

(3 cr; Prereq—1223 or #) Oral presentation skills for scientific or technical topics. Visual communication, audience analysis, organizing a presentation, presenting complex material. Emphasizes use of computers.

**Rhet 3266. Group Process, Team Building, and Leadership.**

(3 cr; Prereq—1223 or equiv or #) Group process theories, team building from perspective of managers/leaders. Communication techniques in small group decision making process. Theories of team/small-group communication. Case studies. Group project for each student.

**Rhet 3270. Special Topics.**

(1-3 cr; max 3 cr, Prereq—STC major or #) See Course Schedule.

**Rhet 3291. Independent Study.**

(1-3 cr; max 3 cr, Prereq—A) Supervised reading and research on topics not covered in regularly scheduled offerings. Intended primarily for upper division undergraduate students.

**Rhet 3335. Rural and Urban Images in Film.**

(3 cr) Country and city life as described in motion pictures, American and international. The “country mouse/city mouse” conflict from ancient literature to the present. Examine the rhetoric of film as an art form with its own criteria of excellence.

**Rhet 3361. Literature of Social Movements in the United States: 1900 to 2000.**

(3 cr; A-F only) Analysis of literature (fictional/nonfictional) of social movements in the United States in last half of 20th century. Artistic truth in relation to historical truth. Roles/obligations of citizens to protest/change social structures.

**Rhet 3371. Technology, Self, and Society.**

(3 cr; Prereq—[Jr or Sr] STC major or #) Culture of technology. Social/personal meanings technology holds. Issues of power, work, identity, and our relation to nature. Mass production/consumption, industrialization of agriculture, changes in art/design, effects of modern transportation/communication technologies.

**Rhet 3376. Terrorism.**

(3 cr) Terrorism is not only an international but an international problem. Different cultures have meant different responses to terrorism. To illustrate this, the course contrasts Algerian, Irish, and Arab terrorism.

**Rhet 3381. 20th-Century Culture.**

(3 cr) Culture represented in historical/political events and arts of the period. Emphasis on European and American painting with units on architecture, literature, film, and theater, as well as a consideration of philosophy and ethics in other disciplines.

**Rhet 3382. War.**

(3 cr) Claim: If ethics (right/wrong) exist in war, then right/ wrong exist everywhere. Students experience this claim through its expression in various arts/humanities media of history, memoir, philosophical meditation, and film.

**Rhet 3383. In Search of Nature.**

(3 cr) The human need for a relationship with nature and the ways we organize our environment to reflect this need. Various images such as the pastoral and wilderness are traced historically. Tensions between rural and urban views of nature.

**Rhet 3384. Carn, Cows, and History: Role of Agriculture in Rise of Civilizations.**

(3 cr; A-F only) Central importance of agriculture (e.g., domestication of plants/animals) in development of settled communities, cities, nations, and empires. How it happened, how we know. Differences among agricultural developments on different continents.

**Rhet 3385. Internet Communication: Tools and Issues.**

(3 cr; Prereq—intranet access including e-mail, [Netscape 3.0 or higher or equiv]) Current/developing tools/issues of internet-based communication. E-mail, e-commerce, social/cultural context of communication. Discussion topics vary, depending on current issues in existing or emerging technologies. Active online participation required.

**Rhet 3562. Technical and Professional Writing.**

(4 cr; A-F only, Prereq—EngC 1011 or 1101 or 1152 or equiv[j],#) Written/oral communication in professional settings. Gathering information, analyzing audience, assessing conventional formats. Drafting, testing, revising documents. Oral presentation of final reports.

**Rhet 3562W. Technical and Professional Writing.**

(4 cr; A-F only. Prereq—EngC 1011 or 1101 or 1152 or equiv[j]) Written/oral communication in professional settings. Gathering information, analyzing audience, assessing conventional formats. Drafting, testing, revising documents. Oral presentation of final reports.

**Rhet 3577W. Rhetoric, Technology, and the Internet.**

(3 cr; A-F only, Prereq—[1101 or equiv[j], [3401 or equiv[j] The Internet from a rhetorical perspective. How the Internet is changing language, power to persuade, scientific/technical knowledge, and legal issues such as copyright, privacy, and free speech. Emphasizes how scientific/technical information is conveyed on the Internet. Ethics issues specific to use of computers.

**Rhet 3671. Project Design and Development I.**

(3 cr; A-F only. Prereq—[3562, STC major or #) Rhetorical principles applied to visual presentation of information/data in print documents. Students create examples of visual communication and design selected technical publications. Principles of technical writing.

**Rhet 3672. Project Design and Development II.**

(3 cr; A-F only. Prereq—3671) Students study, plan, research, design, and develop technical communication print documents, including documentation, brochures, and newsletters. Introduction to workplace project processes. Emphasizes developing production-quality documents.

**Rhet 3701W. Rhetorical Theory and Scientific and Technical Communication.**

(4 cr; Prereq—EngC 1011 or 1101 or 1152 or equiv) Principles/history of rhetorical theory/criticism. Emphasizes classical theories, especially Aristotle’s “Rhetoric.” Apply Aristotelian concepts to examples of contemporary communication. Relationship of classical theory to scientific discourse, technical communication.

**Rhet 4105W. Corporate Video for Technical Communicators.**

(4 cr; A-F only. Prereq—3562 or equiv or #) Introduction to products, professionals, and processes of corporate video. Students analyze corporate video, submit a proposal, treatment, and script; maintain a journal; complete an interactive unit on production; and conduct research on a video-related topic of their choice.

**Rhet 4165. Managerial and Organizational Communication, Planning, and Change.**

(3 cr; A-F only. Prereq—3266 or #) A study of organizational theory, communication processes, planning, and change with emphasis on action research in scientific and/or technical settings. Study of organization and management theory to develop organizational consultative skills.
Rhet 4196. Internship in Scientific and Technical Communication. (3-6 cr; max 6 cr). [N only. Prereq.–STC major or grad student] Internships sites may include the University, industry, or government agencies. An internship proposal, progress report, internship journal (optional), and final report with a letter from the internship supervisor is required.

Rhet 4501. Usability and Human Factors in Technical Communication. (3 cr; Prereq.–[STC major or grad student] or #) Principles/concepts of human factors/usability testing. Text-based, expert-based, user-based, and prototype-based user testing. Developing objectives, criteria, and measures. Conducting tests in lab, field, and virtual environments. Using software programs to analyze qualitative/quantitative data.

Rhet 4561. Editing and Style for Technical Communicators. (3 cr; Prereq.–[3562 STC major or grad student] or #) Editorial process, levels of style, ethical considerations. Cohesion, clarity, coherence, organization, audience. Writer-editor relationship. Editor’s marks. Copyright issues.

Rhet 4573. Writing Proposals and Grant Management. (3 cr; A-F only. Prereq.–3562, undergrad) Research funding sources. Interpreting an RFP or program announcement. Letters of intent. Grant preparation following guidelines of an RFP or program announcement. Proposals for nonprofits or research/business proposals. Using Microsoft Project.

Rhet 4662W. Emerging Technologies in Technical Communication. (4 cr; A-F only. Prereq.–3562 or equiv) Focuses on creating multimedia, hypertext, online help, and internet documents. Linear/nonlinear design, linking, reading/editing online. Principles of technical communication taught through projects: scripts, online support, mark-up language.

Rhet 4671. Principles and Application of Project Management and Design I. (3 cr; A-F only. Prereq.–STC major or grad or #) Two-semester sequence introduces design principles, visual display of data, and management of a variety of publications including newsletters, brochures, and scientific posters, as well as computer software programs to assist in these tasks.

Rhet 4672. Principles and Application of Project Management and Design II. (3 cr; Prereq.–4671) Two-semester sequence introduces design principles, visual display of data, and management of a variety of publications including newsletters, brochures, and scientific posters, as well as computer software programs to assist in these tasks.

Rhet 5111. Message Design: Theory and Practice I. (3 cr; A-F only. Prereq.–Grad student or #) Audience analysis, media selection, message design through various theoretical perspectives, including cognitive/schema, social construction, feminist, intercultural theories. Usability testing, contextual inquiry as means to study effectiveness of messages.

Rhet 5112. Message Design: Theory and Practice II. (3 cr; A-F only. Prereq.–5111) Political, economic, social, and technical aspects of media selection and message design. Media analyses, scripts, budget, treatments, project design plans, interactive screens. On-line design project.

Rhet 5196. Internship in Scientific and Technical Communication. (3-6 cr; max 6 cr; N only. Prereq.–STC grad or #) Internship sites may include the University, industry, or government agencies. An internship proposal, progress report, internship journal (optional), and final report with a letter from the internship supervisor are required.

Rhet 5258. Information-Gathering Techniques in Scientific and Technical Communication. (3 cr; A-F only) Informational, employment-cycle, and problem-solving interviews. Emphasizes guides, schedules, questioning techniques, and communication theories. Descriptive statistics used to analyze data for various projects.

Rhet 5270. Special Topics. (1-3 cr; max 3 cr; A-F only. Prereq.–[STC or RSTC] [major or grad student]) Topics specified in Class Schedule.

Rhet 5291. Independent Study. (1-3 cr; max 3 cr. Prereq.–Grad) Supervised reading and research on advanced projects not covered in regularly scheduled offerings.


Rhet 5531. Scientific and Technical Communication Course Development and Pedagogy I. (3 cr; A-F only. Prereq.–Grad) Pedagogical philosophy/methodology in beginning writing, speaking, and technical communication class. Introduction to theories underlying teaching/tutoring with technology.

Rhet 5532. Scientific and Technical Communication Course Development and Pedagogy II. (3 cr; A-F only. Prereq.–5531 or #) Pedagogical philosophy/methodology in advanced writing, technical communication, distance education courses. Introduction to theories of teaching in scientific/technical communicating/teaching with multimedia.

Rhet 5533. Scientific and Technical Communication Course Development: Teaching Seminar. (1 cr; A-F only. Prereq.–5531 or 5532) Mentor with faculty, usually concurrently with student’s first teaching assignment. Students share observations, solves teaching problems in seminar setting. Issues facing new teachers, developing a philosophy of teaching. Focuses on evaluating work in classroom.

Rhet 5534. Designing Technical Training for Intercultural Audiences. (3 cr; A-F only) Select and research a training topic, write learning objectives and outcomes, set the conditions for learning, complete a comprehensive course outline, and one training module.

Rhet 5562. Theory and Practice in International Business Communication. (3 cr; A-F only. Prereq.–3562 or equiv) Theories and practice in international and intercultural scientific, technical, and business communication. Analyze cultural differences by studying cultural metaphors and research studies, by interviewing people from other cultures including international business managers, and through case studies.

Rhet 5564. Science Writing for Popular Audiences. (3 cr; A-F only. Prereq.–3562 or equiv) How science is “translated” for popular audiences. Rhetorical theory used to critique popularized articles. Developing a heuristic for writing articles. Controversial issues surrounding movement from science as “science to science as “popular.”


Russian (Russ)

Institute of Linguistics, ESL, and Slavic Languages and Literatures

College of Liberal Arts


Russ 1102. Beginning Russian II. (5 cr. Prereq.–1101 or equiv) Listening, speaking, reading, writing.

Russ 1304W. Introduction to Russian Literature: 19th-Century Fiction. (3 cr) Introduction to the study of literature illustrated by materials drawn from Russian literature of the 19th century.

Russ 1905. Freshman Seminar. (3 cr; max 6 cr; A-F only) Topics specified in Class Schedule.

Russ 3001. Intermediate Russian I. (5 cr. Prereq.–1102 or equiv) Conversation, composition, grammar review, translation, readings in literature.

Russ 3002. Intermediate Russian II. (5 cr. Prereq.–3001 or equiv) Expansion of experience in speaking, reading, and understanding Russian. Reading contemporary texts.


Russ 3102. Advanced Russian II. (4 cr. Prereq.–3010 or equiv) Advanced grammar, conversation, composition, and reading.

Russ 3104. Introduction to Literary Analysis. (3 cr. Prereq.–3002 or equiv) Reading and analysis of poetry and prose selections to understand rudiments of studying Russian literature. Readings are in Russian.

Russ 3105. Russian Poetry and Prose. (3 cr. Prereq.–3002) Appreciation of literary values through stylistic analysis and literary interpretation; analysis of humanistic elements. Readings in Russian.

Russ 3211. Modern Russian Literature in Translation. (3 cr; §5211) Literary, cultural, and political significance of modern Russian literary works.

Russ 3311. Russian Major Project. (3 cr; A-F only. Prereq.–Advanced Russian major) Directed research and writing in student’s chosen field.

Russ 3311H. Honors Major Project in Russian. (3-4 cr; A-F only §3312, §3311. Prereq.–Russ major, #) Directed research/writing in student’s chosen field.

Russ 3404. Tolstoy in Translation. (3 cr; §5404) Novels, stories, and philosophical writings of Leo Tolstoy.

Russ 3407. Stories and Plays of Anton Chekhov in Translation. (3 cr; §5407) Study of literary devices and themes in selected stories and major plays using the intrinsic approach.

Russ 3409. 19th-Century Russian Novel. (3 cr; §5409) The Russian realistic novel from origin to decline. Social, political, and intellectual circumstances that led to its emergence as the dominant genre of the “age of realism” in Russia.

Russ 3411. Dostoevsky in Translation. (3 cr; §5411) Novels, stories, and miscellaneous writings of Fyodor Dostoevsky.

Russ 3421. Literature: Middle Ages to Dostoevsky in Translation. (3 cr; §5421) Russian literature from about 1000 A.D. to mid-19th century; emphasizing writers of the first half of the 19th century.
Russ 3422. Literature: Tolstoy to the Present in Translation. (3 cr. §5422) Survey of Russian literature from mid-19th century to the present: realism, modernism, feminism and other trends.

Rus 3512. Russian Art and Culture from Peter I to the Present. (3 cr.) Major trends in Russian visual arts discussed in the context of pertinent social, political, and ideological questions.

Rus 3601. Methods of Translating Fiction From Russian to English. (3 cr. §5601. Prereq–3102 or equiv) Learning to appreciate a variety of literary styles through the experience of translation.

Rus 3900. Topics in Russian Language, Literature, and Culture. (1-4 cr. [max 16 cr.]; Prereq–1102 for language topics) Variable topics in Russian language, literature and culture. Consult department for details.

Rus 3993. Directed Studies. (1-4 cr. Prereq–3002 or equiv) Guided individual study.

Rus 5021. Russia Study Tour. (6 18 cr. Prereq–3002 or equiv) Study of Russian language and culture in an accredited institution in Russia.

Rus 5104. Introduction to Literary Analysis. (3 cr. Prereq–3002 or equiv) Reading and analysis of poetry and prose selections to understand role of studying Russian literature. Readings are in Russian.

Rus 5105. Russian Poetry and Prose. (3 cr. Prereq–3002 or equiv) Appreciation of literary values through stylistic analysis and literary interpretation; analysis of humanistic elements. Readings in Russian.

Rus 5211. Modern Russian Literature in Translation. (3 cr.) Literary, cultural, and political significance of modern Russian literary works.

Rus 5404. Tolstoy in Translation. (3 cr. §3404) Novels, stories, and philosophical writings of Leo Tolstoy.

Rus 5407. Stories and Plays of Anton Chekhov in Translation. (3 cr. §3407) Study of literary devices and themes in selected stories and major plays using the intrinsic approach.

Rus 5409. 19th-Century Russian Novel. (3 cr. §3409) The Russian realistic novel from origin to decline; social, political, and intellectual circumstances that led to its emergence as the dominant genre of the “age of realism” in Russia.

Rus 5411. Dostoevsky in Translation. (3 cr. §3411) Novels, stories, and other writings of Fyodor Dostoevsky.

Rus 5421. Literature: Middle Ages to Dostoevsky in Translation. (3 cr. §3421) Russian literature from about 1000 A.D. to mid-19th century; emphasizing writers of the first half of the 19th century.

Rus 5422. Literature: Tolstoy to the Present in Translation. (3 cr. §3422) Survey of Russian literature from mid-19th century to the present: realism, modernism, feminism and other trends.

Rus 5601. Methods of Translating Fiction from Russian to English. (3 cr. §5601. Prereq–3102 or equiv) Learning to appreciate a variety of literary styles through the experience of translation.

Rus 5900. Topics in Russian Language, Literature, and Culture. (1-4 cr. Prereq–1102 for language topics) Variable topics in Russian language, literature, and culture.

Rus 5993. Directed Studies. (1-4 cr. [max 16 cr.]; Prereq–3002 or equiv) Guided individual study.

Sanskrit (Skt)

Department of Classical and Near Eastern Studies

Skt 5001. Beginning Sanskrit. (3 cr.) Introduction to the classical language of ancient India.

Skt 5002. Beginning Sanskrit. (3 cr. Prereq–5001 or equiv) Introduction to the classical language of ancient India.

Skt 5201. Intermediate Sanskrit. (3 cr. Prereq–5002 or equiv) Readings in Sanskrit literature.

Skt 5202. Intermediate Sanskrit. (3 cr.) Readings in Sanskrit literature.

Skt 5710. Topics: Language and Literature. (3 cr. Prereq–4) Selected reading and/or study of linguistic problems in Sanskrit.

Skt 5992. Directed Readings. (3 cr. Prereq–5202 or equiv) Guided individual reading or study.

Scandinavian (Scan)

Department of German, Scandinavian, and Dutch

College of Liberal Arts

Scan 1101. Intensive Modern Icelandic. (6 cr. §4101. Prereq–A) Basic listening, speaking, reading, writing. Everyday subjects (shopping, directions, family, food, housing). Culture/society. First half is at University of Minnesota-Twin Cities; second half is at University of Iceland-Reykjavik. Six-week course.

Scan 1990W. Topics: Freshman Seminar. (3 cr. [max 6 cr.]; A-F only. Prereq–Fr or max 36 cr.) Topics specified in Class Schedule.

Scan 3012. Scandinavian Languages and Cultures in Contact. (4 cr. Prereq–Nor 3011 or Dan 3011 or Swe 3011) Cultural/linguistic issues common to Denmark, Norway, Sweden. Conversation/composition in one Scandinavian language. Reading/listening in all three languages.

Scan 3501. Scandinavian Culture Past and Present. (3 cr.) Cultural, social, and political developments; principal views and core values; major cultural figures; Scandinavian mentality. Readings in translation for non-majors. Invited lectures on central topics within selected areas of study.

Scan 3502. Scandinavian Myths. (3 cr.) Literary and cultural investigation of the popular beliefs, myths, and religion of the medieval Scandinavians; the interaction of paganism and Christianity; the reflection of myths in Old Scandinavian literature and art. All readings in English.

Scan 3503. Scandinavian Folklore. (3 cr.) Literary and folkloristic investigation of Scandinavian folktales and legends. Readings in translation for nonmajors.

Scan 3504. The Immigrant Experience. (3 cr.) Issues of origin and language, immigration and settlement, traditions and values, culture and politics, and transgressions of boundaries from the old to the new studied through photos, diaries, letters, stories, and novels by Moberg, Rolvaag, Ager, and other pioneers. All readings in translation.

Scan 3505. Scandinavian Fiction From 1890 to Present. (3 cr.) Modernity’s search for new forms to represent changing historical situations. Ibsen, Strindberg, Hamson, Selma Lagerlöf, Hjalmar Bergman, Pär Lagerkvist, Karen Blixen, Moa Martinson, Tarjei Vesaas, Edith Södergran, Ingmar Bergman, Lars Gustafsson. All readings in translation.

Scan 3601. Great Literary Works of Scandinavia. (3 cr.) Major literary works from the Middle Ages to the present. Readings in translation.

Scan 3602. The Literary Fairy Tale in Scandinavia. (3 cr.) Examples of literary fairytales from Scandinavia, especially Hans Christian Andersen. Readings in translation for non-majors.

Scan 3605. The Scandinavian Short Story. (3 cr.) Short stories by important 19th- and 20th-century authors from all the five Scandinavian countries. Genre theory and practical criticism. Readings in English for non-majors.

Scan 3606. The Expressionist Film in Scandinavia. (3 cr.) Study of the expressionist film in Scandinavia with emphasis on the work of Carl Dreyer and Ingmar Bergman. Expressionist film is placed in relation to other manifestations of Expressionism in Scandinavia, i.e., theater and painting. Readings in translation.

Scan 3611. Expressionism in Scandinavia. (3 cr.) Expressionism in literature and art, theater and film with emphasis on August Strindberg, Knut Hamsun, Hjalmar Bergman, Edvard Munch, Pär Lagerkvist, Edith Södergran, and Ingmar Bergman. All readings in translation.

Scan 3612. Images of Scandinavia in Art, Film, and Literature. (3 cr.) Images of Scandinavia(s) in art, film, and literature by both Scandinavians and foreigners. Images of self-knowledge, self-revelation, and otherness. Representative photos and videos of people, locations, and styles. Readings in English.

Scan 3613. Children’s Literature in Scandinavia. (3 cr.) Analysis and discussion of representative works in Scandinavian children’s literature from picture books to young adult books using a variety of critical methods of interpretation. Taught in English.


Scan 3618. Scandinavian Drama. (3 cr.) Study of representative plays by Henrik Ibsen, August Strindberg, Hjalmar Bergman, Pär Lagerkvist, Nordahl Grieg, Kjeld Abell, and Ingmar Bergman in the context of modern theater with emphasis on politics and society. All readings in translation.

Scan 3619. Travel in Literature. (3 cr.) Experiences in literature of Scandinavians going abroad, foreigners coming to Scandinavia. Culture/travel as self-knowledge, self-revelation, otherness. Slides/videos of travel destinations from literature. Readings in English.

Scan 3634. Scandinavian Women Writers. (3 cr.) Investigation of issues important to women as articulated by Scandinavian women writers. Historical overview of women’s writing in Scandinavia and in-depth investigation of texts by contemporary women writers. All readings in translation.

Scan 3670. Topics in Scandinavian Studies. (3 cr. [max 9 cr]) Topic may focus on a specific author, group of authors, genre, period, or subject matter. Topics specified in Class Schedule. Readings in English for non-majors. May meet with 5670.
Scan 4602. Fiction and Film. (3 cr)
Examines film adaptations of classical Scandinavian literary texts and explores similarities and differences between the viewer’s and reader’s experiences in the media of film, drama, and epic narration. Includes works by Blixen, Hamsun, Ibsen, Strindberg, Axel Bergman, Dreyer, and Losey.

Scan 4614. Introduction to Kierkegaard. (3 cr)
The literary, philosophical, theological, and psychological dimensions of Kierkegaard’s work. Kierkegaard’s influence on 20th-century culture in general and existentialism in particular. Analysis and discussion of selections from Kierkegaard’s entire oeuvre. Readings in English.

Scan 4615. The Family in Scandinavian Literature. (3 cr)
The family as theme in important works of Scandinavian literature from Middle Ages to the present. What does a family mean to its members and to society, and what is the cultural and critical significance of literature about the family? Analytical and historical approaches. Readings in English.

Scan 5202. Scandinavian Romanticism. (3 cr)
Study of Scandinavian literature (poetry, drama, and prose). 1800-1870. Texts in the original languages.

Scan 5501. Scandinavian Mythology. (3 cr)
Study of Scandinavian mythology based on primary sources represented by Saxo Grammaticus, Snorri Sturluson’s Edda and Ynglinga Saga, and the Poetic Edda. Myths are analyzed using contemporary historical and philological approaches. All readings in translation.

Scan 5502. The Icelandic Saga. (3 cr)
Study of the sagas written in 13th-century Iceland. Discussion includes cultural and historical information about medieval Iceland and analysis of a selection of saga texts using contemporary critical approaches. All readings in translation.

Scan 5613. Contemporary Scandinavian Literature. (3 cr)
An investigation of issues which emerged as extremely important after 1945 in Scandinavia, as articulated by major works from the major genres and analyzed by researchers in social sciences. All readings in translation.

Scan 5615. Ibsen and the Beginnings of Modern Drama. (3 cr)
Close reading of Ibsen’s “modern tragedies” from A Doll’s House (1879) to When We Dead Awaken (1899). Focus is on the dialectics between Ibsen and his society, and dramatic structure and staging conventions in the context of modern theater. Readings in English for nonmajors.

Scan 5616. Strindberg and the Drama in Revolt and Change. (3 cr)
Strindberg as the master of naturalistic drama and the precursor of modernity in European and American theater. Close reading of plays with emphasis on dramatic structure and staging conventions in the context of modern theater. All readings in English for nonmajors.

Scan 5670. Topics in Scandinavian Studies. (3 cr [max 9 cr])
Topic may focus on a specific author, group of authors, genre, period, or subject matter. Topics specified in Class Schedule. Readings in English for nonmajors. May meet with 5670.

Scan 5701. Old Norse Language and Literature. (3 cr)
Acquisition of a reading knowledge of Old Norse; linguistic, philological and literary study of Old Norse language and literature.

Scan 5702. Old Norse Saga Reading and Analysis. (3 cr. Prereq–5701 or equiv reading knowledge of Old Norse)
Reading and analysis of Old Norse prose narratives, including close reading and discussion of the critical literature about the prose narratives and medieval Icelandic culture. All primary texts read in Old Norse.

Scan 5703. Old Norse Poetry. (3 cr. Prereq–5701 or equiv reading knowledge of Old Norse)
Reading and analysis of either eddic poetry from the Poetic Edda or skaldic poetry. Texts read in Old Norse.

Scan 5704. History of the Scandinavian Languages. (3 cr)
Investigation of the development of the Scandinavian languages from the earliest periods to the present.

Scan 5711. Structure of the Scandinavian Languages. (3 cr. Prereq–Introductory course in linguistics or #)
Investigation of the philological, grammatical, and lexical systems of the Scandinavian languages.

Scan 5993. Directed Studies. (1-4 cr [max 12 cr]. Prereq.–A, A, D)
Guided individual reading and study.

Science in Agriculture (ScAg)

College of Agricultural, Food, and Environmental Sciences

Sacg 1001. Orientation to Science in Agriculture. (1 cr; S-N only)
Discussion of the Science in Agriculture major, current issues, career paths. All readings in translation.

Sacg 1501. Biotechnology, People, and the Environment. (3 cr; A-F only)
Basic concepts in genetic engineering as a foundation for studying the impact of biotechnology on agriculture, medicine, industry, and the environment. Controversial aspects of biotechnology related to public policy issues are discussed.

Sacg 4009W. Undergraduate Senior Thesis: Science in Agriculture. (1-6 cr [max 12 cr]; A-F only. Prereq.–jr or sr major in ScAg, #)
Research and thesis experience conducted under supervision of a COAFES faculty member. Recommended course length is one full year. A written bound thesis and oral presentation of research results is required.

Social Work (SW)

School of Social Work

College of Human Ecology

History of American social services; rise of professional social work in response to human need. Social, political, and economic factors influencing public policy and services. Role of social workers with individuals, families, groups, and communities; values and ethics of professional helping role.

SW 3051. Ethno-cultural Concepts and Human Services. (3 cr)
Ethno-cultural concepts relevant to service delivery. Critically examine cross-ethnic issues and practice considerations in the field of human services, and explore issues which produce barriers to services for diverse racial and cultural client groups.

SW 3101. Interventions in Community and Social Policy. (3 cr)
Applying social work skills and values to community organization, social action, and social problems using an ecological framework.

SW 3203. Interventions with Individuals and Groups. (3 cr)
Using an ecological framework, apply social work skills and values to work with individuals and small groups.

SW 3402. Child Abuse and Neglect: Intervention and Prevention. (3 cr)

SW 3705. Gender Violence in Global Perspective. (3 cr)
Theories/research on violence in intimate domestic relationships examined through multiple lenses. Overview of interventions in Minnesota, United States, and other societies.

SW 3706. Family Violence and Prevention: Exploring the Issues. (3 cr)
Major issues related to child abuse, gender violence, elder abuse, and intergenerational issues of violence in families. Types of violence, issues unique to families. Dynamics, contributing factors, and types of interventions.

SW 4001. Basic Counseling and Interviewing Skills in the Social Work Helping Process. (1 cr; A-F only)
Development/maintenance of a social worker-client helping relationship. Professional values and ethics. Interviewing skills of active listening, empathy, and authenticity. Identifying purpose, roles, and responsibilities through asking questions, reflecting, and clarifying.

SW 4002. Advanced Counseling and Interviewing Skills in the Social Work Helping Process. (1 cr; A-F only. Prereq.–4001 or #)
Builds on 4001. Focuses on assessment and on developing reasonable, measurable, and attainable goals. Working with involuntary clients, goal attainment strategies, evaluating progress, and ending.

SW 4693. Directed Studies. (1-10 cr [max 10 cr]. Prereq.–#)
Guided individual reading or study related to social issues, social work methods, or social work history.

SW 4694. Directed Research. (1-10 cr [max 10 cr]. Prereq.–#)
Guided research related to social issues, social work methods, or social work history.

SW 5051. Human Behavior and the Social Environment. (2-3 cr; A-F only. Prereq.–Grad student or # in social sciences or #)
Social, psychological, biological, and cultural factors of individual and group development as applied to social work practice. Behavior and life-cycle development focusing on diversity and each stage of life. Discuss development in terms of the individual, and in terms of overlapping social systems such as the multigenerational family, culture, community, and society.
SW 5052. Ecologies of Child Development Within Communities of Color. (3 cr. Prereq–Grad or #) Examines sociocultural, cognitive, and affective development of children of color via a life course, ecological systems framework. Family, school, peers, and community are studied as ecological contexts which influence developmental trajectories for these children and youth. Attention is given to poverty, racism, and oppression.

SW 5101. Historical Origins and Contemporary Policies and Programs in Social Welfare. (3-4 cr; A-F only; Prereq–Grad or 8 sem cr of social sciences) Contemporary programs in social welfare are examined in light of their historical origins and evolution. A framework is then developed for analysis of concepts and principles in contemporary social policy for social welfare programs and services. The emergence of the profession of social work also examined.

SW 5105. Women and Public Policy. (3 cr) Study of feminist organizations, issues and conflicts within organizations and institutions; methods and strategies underlying feminism.

SW 5107. Child Development and Social Policy. (3 cr. Prereq–Grad or #) Examine the intersection of conceptual orientations of developmental psychology with policies that affect children and families. Demographic, historic, and social trends underlying the assumptions that drive policies directed at women and children; projections of future policies.

SW 5309. Case Management with Special Populations. (3 cr. Prereq–Grad or adult special or #) Examine concepts and principles of case management practice with special populations such as older adults, persons with developmental disabilities, and persons with serious and persistent mental illness. The core functions of case management practice in a range of settings are addressed in relationship to issues of diversity, vulnerability, and empowerment.

SW 5313. Social Work with Older Adults. (2 cr. Prereq–Grad or adult special or #) The practice components of social work with older adults including assessment, intervention, and case management. Taught from the perspective of bio-psycho-social strengths and challenges and within the context of current social policy and delivery systems.

SW 5314. Social Work in the Schools. (2 cr. Prereq–Grad or adult special or #) Application of social work methods in a school setting. Emphasizes assessment, diagnosis, consultation, advocacy, interdisciplinary team building, and crisis intervention.

SW 5315. Social Work Practice in Hospitals and Health Care Settings. (2 cr. Prereq–Grad or adult special or #) Prepares students for social work practice in a hospital or health care setting. Focus on integration of conceptual and practice subject matter that covers differential assessment, clinical intervention models, impact of acute and chronic illness, special populations, managed care, legal and ethical issues, interdisciplinary team work, and planning in health care.

SW 5316. Brief Treatment and the Task-Centered Approach. (2 cr. §8303. Prereq–Grad or adult special or #) The advent and current prominence of brief treatment models in work with individuals, families, and groups including their theoretical and empirical bases. Practice with diverse populations in a context of managed care. Emphasis on the task-centered approach including skill training and supervised practice.

SW 5317. Social Work With Involuntary Clients. (2 cr. Prereq–Grad or adult special or #) Includes theory, ethics, effectiveness, and intervention methods for work with client systems that experience involuntary contact with a social worker. Interventions, at micro, mezzo, and macro levels are included. Practice in varied settings such as child welfare, mental health, corrections, and public schools as well as practice related to organizational responses to change.

SW 5318. Family Centered Home Based Services. (2 cr §8314. Prereq–Grad or adult special or #) Ecological systems approach focusing on the family system. Triadic theory, meta-neutrality, strengths-focus, case management and team treatment. Family-based services evaluated for high-risk, multi-problem families and as an alternative to foster placement.

SW 5319. Adolescents: Norms, Culture, and Health. (2 cr) Relationships among familial, social, societal, political, economic, environmental, psychosocial, and cultural determinants of adolescent behavior that affect health; major public health issues and problems of adolescents.

SW 5481. Child Abuse Prevention I: Research and Theory. (3 cr. Prereq–Bachelor's degree or #) Foundation of research/theory for level I child abuse prevention studies certificate.

SW 5482. Child Abuse Prevention II: Program Development, Evaluation, and Advocacy. (3 cr. Prereq–5481) Design and evaluation of policies and programs of interventions to prevent child abuse. This is the second course of the level I Child Abuse Certificate program.

SW 5483. Child Abuse Prevention III: Skill Building I—Cultural and Legal Issues. (3 cr. Prereq–Bachelor's degree or #) Risk factors, protective factors, resilience in cultural settings. Identifying/designing strategies appropriate to cultural characteristics. First course for level II child abuse prevention certification.


SW 5519. Mediation and Conflict Resolution. (3-4 cr. §8519) Develop mediator skills for making informed decisions regarding the appropriateness of mediation for conflicts that frequently confront social worker practitioners such as divorce, neighborhood disputes, conflicts between parents and adolescents, conflicts between spouses, and conflicts between crime victims and offenders.

SW 5525. Global Perspectives on Social Welfare, Peace, and Justice. (3 cr. Prereq–2001 or #) Role of international social welfare in meeting basic human needs and promoting human rights, social justice, and peace. Theories, models, and social policies in different economic and political systems with emphasis on Third World nations.

SW 5705. Violence in Families. (3 cr. §5707. Prereq–Grad student or adult special or #) Prevention/intervention with perpetrators, survivors, and social institutions. Perpetration, effects on victims, social responses to family violence. Child abuse/neglect. Abuse of women/vulnerable adults. Roles of gender, race, culture, age, physical ability, and sexual orientation.


SW 5707. Interventions with Battered Women and Their Families. (2 cr. §5705. Prereq–Grad or adult special or #) Current theories, research, and evaluation of interventions with battered women and their families. Focus on practice, e.g., direct work with social institutions, victim-survivors, and assauliants and their families.

SW 5708. Substance Abuse and Social Work. (3 cr. Prereq–Grad or adult special or #) Assessment and intervention in situations involving substance abuse with special emphasis on cross cultural practice. Relationships of substance abuse to areas such as child welfare, mental illness, and violence within families are examined.

SW 5709. Applied Psychopharmacology for Human Service Professionals. (2 cr. Prereq–Grad or #) Categories of psychoactive drugs. Medications to treat mental disorders. Legal drugs such as alcohol, nicotine, cocaine, and marijuana. What is occurring physiologically when someone takes a psychotropic drug.


Soc 321W. American Race Relations. (3 cr.; F-A only) Surveys conceptual and theoretical tools sociologists use to study race relations in the United States. Empirical focus on the historical experiences among different racial/ethnic groups in the United States including, American Indians, African-Americans, Latinos, Asian-Americans, and white ethnics.

Soc 3221. Sociology of Gender. (3 cr.; F-A only; W/St 3201, Prereq–1001 or #) Organization, culture, and dynamics of gender relations as major features of social life. Gender and racial inequality in the workplace, relationships between gender and race, gender and culture, sexuality, gendered politics, and the women’s movement.

Soc 3251W. Sociological Perspectives on Race, Class, and Gender. (3 cr.; F-A only) Race, class, and gender as aspects of social identity and as features of social organization. Experiences of women of color in the United States; exploration of family life, work, violence, sexuality and reproduction, and the possibilities for social change.

Soc 3301W. The Uses of Citizenship: An Introduction to Political Sociology. (3 cr.; F-A only; Prereq–1001 or #) The ideas of citizenship and the relationship between politics and society; public sphere and civil society. Reserves space/practicing at a policy-relevant site using participant observation methods.

Soc 3322. Social Movements. (3 cr.; F-A only; Prereq–1001 or #) Origins, dynamics, and consequences of social movements. Challenges facing movement organizations. Relationship between movements and political institutions. Role of movements in bringing about social change. Organized around theoretical issues, draws on wide variety of case studies.

Soc 3331W. Politics and Society in the New Europe. (3 cr.; §Pol 3451, Prereq–1001 or Pol 3051 or #) Generational change/values, political parties, welfare state, future of European integration, political stability/democratization.

Soc 3411W. Understanding Formal Organizations. (3 cr.; F-A only; Prereq–1001 or #) Formal organizations as major social influences in our work lives, personality development, social change, and conflict. Life-course analysis of enterprises, bureaucracies, and voluntary organizations. Organizational control, conflict, coordination, and interorganizational sets and relationships.

Soc 3415. Sociology of Consumer Behavior. (3 cr.; F-A only; Prereq–1001 or #) Behaviors related to symbolic value of material goods, how symbols are created, acquired, diffused, and used for organizing personal identity and for maintaining group boundaries. Fashion. Socialization. Structure of retail trade. Role of mass media, advertising, marketing/production strategies. Implications of worldwide markets for manufacturing goods and selling them in retail stores. Readings, classroom discussions, lectures.

Soc 3451W. Urban Community. (3 cr.; Prereq–1001 or #) Social, economic, and political organization of the urban community focusing on racial inequality—segregation, urban concentration, social reproduction, and civic participation of elites and residents. Cross-national comparisons, including United States, Europe, and East Asia.


Soc 3501. Sociology of the Family. (3 cr. Prereq–1001 or #) Families in contemporary American society: historical and cross-cultural comparisons; interrelationships of families with other social institutions; race, class, and gender in shaping family experiences. Topics may include marriage, divorce, childbearing, parenthood, family violence, gay and lesbian families.

Soc 3511. World Population Problems. (3 cr. Prereq–1001 or #) Population growth and natural resources, fertility and mortality in less developed nations, population dynamics and forecasts, policies to reduce fertility.

Soc 3661. Japanese Society Today. (3 cr.; F-A only; SEAS 3661, Prereq–1001 or courses on or exper in East Asia or #) Forms of social relations and values, religion, childhood, family, community, education, work, business organization, politics, social classes, crime and deviance, police, public culture, status of women and minorities, social protest movements, and international relations.

Soc 3711. Contemporary Chinese Society: Mainland China, Hong Kong, Taiwan. (3 cr.; F-A only; SEAS 3711; SGeo 3711, Prereq–1001 or Geog 1301 or equiv) Social sciences or humanities course or #) Focuses on post-1949 mainland China, Taiwan, and Hong Kong. Chinese family, dating and marriage, rural and urban societies, population, work and occupation, socioeconomic development and inequalities, and impacts of post-1978 reforms.

Soc 3701. Social Theory. (4 cr; F-A only; Prereq–1001 or #) Traditions of social theory that have been basic to sociological knowledge, how they have expanded in contemporary theory, and their applications in selected areas of empirical research.

Soc 3711. Principles of Social Organization. (3 cr.; F-A only; Prereq–1001 or equiv) How and why social organization is possible. Concepts and theories of social structure, primary forms of social organization (groups, communities, networks, formal organizations), basic social processes (interaction, differentiation, regulation, change), and how social organization evolves from individual decision making.

Soc 3721. Principles of Social Psychology. (3 cr. Prereq–1001 or #) Impact of social location on individual attitudes and behaviors, dynamics of interpersonal relationships and small groups, and processes of social interaction.


Soc 3811. Basic Social Statistics. (4 cr.; Prereq–GC 0731 or intermediate algebra, 3801 recommended) Descriptive statistics, measures of central tendency, deviation, association. Inferential statistics focusing on probability and hypothesis testing. T-tests, Chi-square tests, variance analysis, bivariate regression. Statistical software used to analyze sociological data.

Soc 3821. Computer Use for Social Statistics. (1 cr; S-N only, Prereq–E3811 recommended) Elementary computer use in social statistics applications. Use of Statistical Package for Social Sciences (SPSS) for preparing and analyzing sociological data.

Soc 3991H. Junior Honors Seminar. (3 cr; F-A only. Prereq-Jr soc honors student) Read and discuss sociological research literature; explore research funding opportunities; design individual research projects.

Soc 4091. Topics in Sociology. (1-3 cr., Prereq–#) Topics specified in Class Schedule.

Soc 4101. Independent Study. (1-4 cr. Prereq–#) Independent study of an established 4xxx course. Available only by request.

Soc 4103. Directed Study. (1-4 cr. Prereq–#; A, Q) Guided individual reading or study at the junior/senior level.

Soc 4104. Directed Research. (1-4 cr. Prereq–#) Guided research experience at the junior/senior level.

Soc 4101W. Sociology of Law. (3 cr.; F-A only; Prereq–[1001, 3101, 3102, 3111] or #; 3701 recommended) Sociological analysis of law/society. Why people obey the law, social forces involved in creating law (both civil and criminal), procedures of enforcement, impact of law on social change.


Soc 4105. Sociology of Punishment and Corrections. (3 cr.; F-A only; Prereq–[3101, 3102, 3111] or #) Advanced study of correctional strategies such as prison, probation, and parole. Theories/structures of diversion, probation, parole, and other community corrections programs. U.S. penal policies/practices compared with those in other countries.

Soc 4107. Comparative Law and Social Control. (3 cr.; F-A only; Prereq–[3101, 3102, 3111] or #) Sociological analysis of legal systems in different countries. Relationship between legal systems and society. Cross-national variation in crime rates, criminal justice systems, legal doctrine, litigation, and lawyers.

Soc 4108. Current Issues in Crime Control. (3 cr. Prereq–[3101, 3102, 3111] or #) Selected current criminal justice policies examined from perspective of courts, legislature, community, and interest groups. Impact of criminal justice policy changes on society and on social control agencies.


Soc 4111. Deviant Behavior. (3 cr; F-A only. Prereq–[3101, 3102, 3111] or #) Definition/nature of deviant behavior. Social processes associated with deviant careers and social reintegration. Relationship of deviant behavior to social control.


Soc 4125. Policing American Society. (3 cr.; F-A only; Prereq–[3101, 3102, 3111] or F; 4161, 4162 recommended) Police organizations/operations from social science perspective. Formal/informal functions, legal bases, accountability/restraints, community relations, use of force, illegal practices.

Soc 4135. Sociology of White-Collar Crime. (3 cr.; S-N only. Prereq–[3101, 3102, 3111] or #) Causes/consequences of white-collar crime. Control issues, including public perception, legislation, criminal law responses (enforcement, sentencing, punishment), and alternative control mechanisms.
Course Descriptions


Soc 4147. Sociology of Mental Illness. (3 cr. Prereq—[1001, 3101, 3102, 3111] or #) Sociological theory/research related to definitions/origins. Epidemiology, reaction patterns, use of mental health services.

Soc 4148. Criminal Psychopathology. (3 cr. Prereq—Sr or grad; only grad may take S/N) Psychiatric and psychological aspects of antisocial and criminal behavior as related to issues faced in the courts and criminal justice system.

Soc 4149. Killing. (3 cr. Prereq—Sr or grad; only grad may take S/N) Sociological, legal, and psychological aspects of diverse types of killing. The topic of “normal” killings is contrasted with various pathological types. Subtopics include: mentally disturbed killings, sexual killings, killings within families, gang killings, and terrorist killings.

Soc 4161. Criminal Law in American Society. (3 cr. Prereq—[3101, 3102, 3111] or #) Purposes of criminal law and of principles of criminal liability, justification, and excuse. Applications to law of criminal homicide, sexual assault, drugs, and crimes against property, public order, and morals.

Soc 4162. Criminal Procedure in American Society. (3 cr. Prereq—[3101, 3102, 3111] or #) How a constitutional democracy balances need to enforce criminal law and rights of individuals to be free of unnecessary governmental intrusion.

Soc 4170. International Law and Cultural Change. (3 cr; A-F only. Prereq—[1001, 3101, 3102] or #) In a globalized world, which cultural values/practices take prominence? Which are criticized, altered, eliminated? What role does international law play in these processes? Immigration, terrorism, Americanization, structure of international legal system.

Soc 4175. Law, Politics, and Inequality. (3 cr; A-F only. Prereq—[1001, 3101, 3102] or #) Critically evaluates law as a resource that defines, reinforces, and alters social relationships. Connection between law and justice. Law seen from perspective of class, race, or gender.

Soc 4305. Society and the Environment: A Growing Conflict. (3 cr; A-F only. Prereq—1001 or environmental course or #) Societal causes and cures of ecological problems such as global warming, species extinction, and resource exhaustion.


Soc 4441. Work-Family Links. (3 cr. Prereq—1001 or #) Effects of spouses' work experiences on the family, organization of household work, adolescent employment, occupational attainment; and changes in work organizations related to the increasing prevalence of female employment and dual-earner families.


Soc 4601. Comparative Social Structure. (3 cr; A-F only. Prereq—1001 or #) Comparative analysis of selected societies. Application of comparative methods to explain differences, similarities in social structure, development, trends. Topics include, social class, status, political economy, policies, social movements, ethnic identities, multicultures, demography. Methods include network models, Boolean analysis.

Soc 4662. Comparative East Asian Development: A New Model for Growth and Prosperity. (3 cr; A-F only. SEAS 4662. Prereq—3661 or Soc 3661 or related Asian or sociology courses or East Asian experience or #) Social and cultural reasons for the rapid growth and relative equity of Japan, South Korea, Taiwan, Hong Kong, Singapore, and more recently, China. Relation of these examples to more general theories of development.

Soc 4681. Sociology of German Society. (3 cr; A-F only. Prereq—1001 or #) The making of German society; institutions in cross-national comparison (including family, education, welfare state, social movements, law); and current issues of German society.

Soc 4703. Social Theory and Cultural Change. (3 cr; A-F only. Prereq—1001 or #) Key changes in cultural life in the United States and internationally, and theories that have been developed to understand them. Topics may include work, family, social movements, media and popular culture, and politics.

Soc 4821. Computer Methods in Social Research. (3 cr. Prereq—3801 or equiv recommended) Computer applications in social science research. Hands-on practice using and evaluating software for conducting research; using the Internet; automated surveys; transforming and analyzing numeric, textual, and graphical data; using simulations and other computer models.


Soc 496W. Advanced Senior Project Independent Study. (1 cr; A-F only. Prereq—3701, 3801, 3811, 12 additional upper div sociology cr, #) Guided individual research for the sociology major's senior project requirement, conducted in conjunction with enrollment in an upper division sociology course.

Soc 497V. Senior Honors Proseminar I. (3 cr; A-F only. Prereq—4977 or 4978) Exploring contemporary research for senior thesis. Guidance in defining a problem and reviewing prior theory and research. Presentation and discussion with faculty researchers.

Soc 497V. Senior Honors Proseminar II. (3 cr; A-F only. Prereq—4977 or 4978 or #; sr soc honors major, 3701, 3801, 3811, 9 additional upper div sociology cr, #) Developing the methodology of the senior project, researching it, and writing the thesis. Students work individually or in small groups in consultation with seminar director and other faculty. Group discussion of individual projects.

Soc 5090. Topics in Sociology. (1-3 cr. Prereq—1001 or #) Topics specified in Class Schedule.

Soc 5091. Independent Study. (1-4 cr. Prereq—#) Independent study of an established 5xxx course.

Soc 5301W. Social Movements. (3 cr. Prereq—# for undergrads; 3301 or #) Origins, dynamics, and consequences of social movements. Dilemmas and challenges facing movement organizations. Relationship among movements, parties, and states and role of movements in bringing about change. Case studies of civil rights, labor, environmental, women’s, gay rights, and student movements.

Soc 5455. Sociology of Education. (3 cr. Prereq—1001 or equiv or #) Structures and processes within educational institutions. Links between educational organizations and their social contexts, particularly as these relate to educational change.


Soil

Department of Soil, Water, and Climate

College of Agricultural, Food and Environmental Sciences

Soil 1125. The Soil Resource. (4 cr) Basic physical, chemical, and biological properties of soil. Soil genesis classification and principles of soil fertility. Soil survey information used to make a land-use plan. WWW used for lab.


Soil 3521. Soil Judging. (1 cr; max 3 cr. Prereq—4511) Learn about collegiate soil judging by participating in a regional or national soil judging contest.


Soil 4021W. Environmental Impact Statements. (3 cr. Prereq—AgEc 3212, Biol 3001 or 16 cr of science) Roles of governmental agencies, consultants, and private citizens in the EIS process. Students will read EIS, EAW and analyze their content and scope, and prepare an EAW according to Minnesota EQB guidelines and an EIS on a local project.

Soil 4093. Directed Study. (1-7 cr [max 20 cr]. Prereq—4) Research, readings, and instruction.

Soil 4094. Directed Research. (1-7 cr [max 7 cr]. Prereq—4) Research under the direction of department faculty.

Soil 4111. Introduction to Precision Agriculture. (3-5 cr; A-F only, SMAST 2420, Prereq—Basic sciences, statistics, soil, agronomy) Soil, landscape, and crop spatial variability. GIS, DEM, GPS technologies, Variable rate machinery, PA software, Geostatistics, sampling, experimental designs. Precision integrated crop management. Data acquisition, processing, and management. Socio-economical and e-marketing aspects.

Soil 4121. Microbial Ecology and Applied Microbiology. (3 cr; A-F only, Prereq—3612, Biol 3301 or Mic 3301) Interrelationship of microorganisms with terrestrial, aquatic, and organismal environments; survey of bacterial, fungal, and viral components of ecosystems; evolution and structure of microbial communities; population interactions within ecosystems; quantitative and habitat ecology; biogeochemical cycling; and biotechnological approaches to study of microbial ecology; molecular microbial ecology; gene transfer in the environment. Molecular phylogeny of microorganisms.


Soil 4511. Field Study of Soils. (2 cr. Prereq—2125) Learn to write soil profile descriptions in the field. Class requires hands-on experience to determine soil texture, color, and horizon designations in the field.

Soil 4601. Soils and Pollution. (3 cr. Prereq—2125, Chem 1021 or equiv, Phys 1042 or equiv) or #; 3416 recommended) Principles of microbiology, chemistry, physics applied to evaluation of pollution. Mitigation of pollution in agricultural/urban settings, remediation of polluted sites.

Soil 5111. Practicum Internship in Precision Agriculture. (2-5 cr; S-N only. Prereq—4) Practical experience in precision agriculture in agricultural/business. Content and extent of work at the internship site is jointly decided by the instructor, host business representative, and student’s principal advisor.

Soil 5125. Soil Science for Teachers. (3 cr) Basic physical, chemical, and biological properties of soil, soil classification and principles of soil fertility, WWW used for lab. Soil survey information used to make a land-use plan. Similar to 2125 with less emphasis on chemistry.

Soil 5211. Environmental Biophysics and Ecology. (2-2, F-A only, Prereq—[Biol 1009 or equiv, Math 1271, Phys 1101, (upper div or grad student)] or #) Basic concepts of environmental variables such as temperature, humidity, wind, and radiation. Mechanics of heat/mass transfer between a living organism and its surrounding environment. Set of practical examples to integrate concepts and transport processes.

Soil 5212. Environmental Biophysics and Ecology Laboratory. (1 cr; A-F only, Prereq—Biol 1009, Math 1271, Math 1262, Phys 1101) Introduces experimental techniques in environmental biophysics and ecological studies. Measuring biophysical parameters of plants, animals, and their surrounding environments. Defining/describing physical status of a living organism, determining the rate of mass/energy exchange and physical status of a living organism, determining the rate of mass/energy exchange and physical status of a living organism, determining the rate of mass/energy exchange.

Soil 5232. Vadose Zone Hydrology. (3 cr. Prereq—[Math 1271 or equiv, Phys 1042 or equiv]) Basic soil physical properties/processes governing transport of mass/energy in soils. Emphasizes water/solute transport through unsaturated root/vadose zones, their impact on subsurface hydrology and on water quality. Lectures, hands-on laboratory exercises, discussion of real world problems, problem solving.


Soil 5312. Soil Chemistry and Mineralogy Laboratory. (2 cr; Prereq—5311 recommended) Companion laboratory 5311. Clay mineral preparation for x-ray diffraction, selective mineral dissolution, cation exchange properties, adsorption and solubility reactions and their modeling, carbonate equilibria, and organic matter extraction and identification.

Soil 5402. The Atmospheric Boundary Layer. (3 cr. Prereq—Math 1271, Phys 1201, Stat 3011) Calculus-based introduction to the atmospheric boundary layer (ABL), the interface between the earth’s surface and the atmosphere. Topics include ABL development and turbulence, surface energy balance, ABL clouds, air quality, microclimate, and observational and modeling methods.

Soil 5421. Introduction to Atmospheric Science. (3 cr. Prereq—Math 1271, Phys 1201, Stat 3011) Calculus-based, introductory description of the atmosphere including atmospheric dynamics, radiation, thermodynamics, chemical composition, and cloud processes. Discuss applications to climate, meteorology, the hydrologic cycle, air quality, and observational and modeling methods.

Soil 5515. Soil Genesis and Landscape Relations. (3 cr. Prereq—2125 or #) Basic soil morphology and soil profile descriptions; pedogenic processes and models of soil development; soil geography/hydrology, and hillside processes; digital spatial analysis; soil classification; soil surveys and land use; soil geography.


Soil 5555. Wetland Soils. (2-3 cr; A-F only, Prereq—1125 or 2125 or equiv or #; 14511 recommended) Morphology, chemistry, hydrology, formation of mineral/organic soils in wet environments. Soil morphological indicators of wet conditions, field techniques of identifying hydric soils for wetland delineations. Peatlands. Wetland benefits, preservation, regulation, mitigation. Field trips, lab, field hydric soil delineation project.


Soil 5711. Forest Soils. (2 cr. Prereq—1125 or 2125) Factors affecting tree growth; estimation, modification, and management effects on site productivity; regeneration.

South Asian Languages and Cultures (SALC)

Department of Asian Languages and Literatures

College of Liberal Arts

SALC 1506. Introduction to Contemporary South Asia. (3 cr) Land, people, modern historical development, contemporary problems, global setting, and future outlook of South Asia.

SALC 1607. Introduction to Indian Civilization. (3 cr) Indian civilization in its development as a social, cultural, economic, and political life. Hinduism, Muslim, and Buddhist contributions.

SALC 3201. Ancient Indian Literature in Translation. (3 cr) Literary achievements of Indian civilization from the ancient period.

SALC 3202. Modern Indian Literature in Translation. (3 cr) Literary achievements of Indian civilization from the modern period.

SALC 3204. Folklore of India. (3 cr) A study of the main genres of Indian folklore: folk tales, folk songs, folk stories, folk dramas, proverbs, and riddles; their relationship to Indian society and inter-relationship with literary traditions, both great and small.

SALC 3411. Introduction to Indian Philosophy. (3 cr) Major concepts, principal schools of Indian philosophy; traditional and contemporary views.

SALC 3412. Hinduism. (3 cr) Development of Hinduism focusing on sectarian trends, modern religious practices, myths and rituals, pilgrimage patterns and religious festivals, and the interrelationship between Indian social structure and Hinduism.

SALC 3413. Buddhism. (3 cr) Historical account of Buddhist religion in terms of its rise, development, various schools, and common philosophical concept. Indian Buddhism, compared with Hinduism; Buddhism’s demise and revival on the Indian subcontinent.

SALC 3414. Comparative Religions of South Asia. (3 cr) Compares and contrasts basic philosophical concepts, literatures, ideologies, and ritualistic practices of Hinduism, Buddhism, and Jainism with those of Islam and Sikhism.

SALC 5090. Instruction in South Asian Languages. (3-5 cr) Individualized instruction in one of the South Asian languages.

SALC 5201. Ancient Indian Literature in Translation. (3 cr) Literary achievements of Indian civilization from the ancient period.

SALC 5202. Modern Indian Literature in Translation. (3 cr) Literary achievements of Indian civilization from the modern period.

SALC 5204. Folklore of India. (3 cr) A study of the main genres of Indian folklore—folk tales, folk songs, folk dramas, folk proverbs, and riddles—its relationship to Indian society and inter-relationships with literary traditions, both great and small.

SALC 5411. Introduction to Indian Philosophy. (3 cr) Major concepts; principal schools of Indian philosophy; traditional and contemporary views.

SALC 5412. Hinduism. (3 cr) Development of Hinduism focusing on sectarian trends, modern religious practices, myths and rituals, pilgrimage patterns and religious festivals, and the interrelationship between Indian social structure and Hinduism.

SALC 5413. Buddhism. (3 cr) Historical account of Buddhist religion in terms of its rise, development, various schools, and common philosophical concept. Indian Buddhism compared with Hinduism; Buddhism’s demise and revival on the Indian subcontinent.

SALC 5414. Comparative Religions of South Asia. (3 cr) Compares and contrasts basic philosophical concepts, literatures, ideologies, and ritualistic practices of Hinduism, Buddhism, and Jainism with those of Islam and Sikhism.

SALC 5456. The Cinema of India. (3 cr) Survey of cinema of South Asia: aesthetic, social, economic, and political perspectives.

SALC 5500. Problems in Indian Philosophy. (3 cr) A critical examination of the role of philosophy in the development of Indian civilization, and the nature of the relationship between philosophy and society.

SALC 5521. Gandhi and Non-Violent Revolution. (3 cr) Character of Gandhi, his influence over contemporary, and his hold on the world today.

SALC 5556. Women in India: Role and Repression. (3 cr) Representation of Indian women studied through literature of contemporary Indian women and against background of traditional Indian values and roles.

SALC 5710. Seminar in South Asian Languages. (4-5 cr) Selected topics on South Asian languages; no knowledge of South Asian languages required.

SALC 5720. Seminar in South Asian Literature. (4-5 cr) Selected topics on South Asian literature.

SALC 5730. Seminar in South Asian Culture. (4-5 cr) Selected topics on South Asian cultures.

SALC 5883. India’s Gods and Goddesses. (3 cr) Indian history examined by following development of the deities Krishna, Shiva, and Kali.

SALC 5993. Directed Studies. (1-5 cr. Prereq—A, F, A) Guided individual reading and study of topics not covered in regular courses. Open to qualified students for one or more semesters.

SALC 5994. Directed Research. (1-5 cr. Prereq—A, F, A) Directed research on topics of language, literature, or civilization selected by qualified students with consent of instructor and studied on tutorial basis.

Spanish (Span)

Department of Spanish and Portuguese Studies
College of Liberal Arts

Span 0144. Intermediate Medical Spanish. (0 cr. Prereq—1st yr college level Spanish or equiv) Vocabulary of Spanish medical terms, skills in report writing, proper format for medical communications. Developing conversational fluency for medical-related topics.

Span 0221. Reading Spanish. (0 cr; 5-N only) Intensive reading of a variety of texts to provide a basic reading knowledge of Spanish. At the end of the semester students may take the equivalent of the Spanish Graduate Reading Examination.

Span 1001. Beginning Spanish. (5 cr) Vocabulary, reading, writing, understanding, conversational fluency for basic communication. Cultural readings.


Span 1014. Business Spanish. (4 cr. Prereq—1003 or [A, A]) Vocabulary, report writing skills, proper format for business communications, conversational fluency on trade-related topics.

Span 1022. Alternate Second-semester Spanish. (3 cr. Prereq—Placement above 1001) For students who have studied Spanish in high school or at a community college, or who are transfer students. Begins with an accelerated review of 1001 followed by material covered in 1002.


Span 1044. Intermediate Medical Spanish. (4 cr. A-F only. Prereq—1003 or equiv) Vocabulary of Spanish medical terms, skills in report writing, proper format for medical communications. Developing conversational fluency for medical-related topics.

Span 1902. Topics: Freshman Seminar. (3 cr; A-F only. Prereq—Fr or max 36 cr) Topics specified in Class Schedule.

Span 1907W. Topics: Freshman Seminar. (3 cr; A-F only Prereq—Fr or max 36 cr) Topics specified in Class Schedule.

Span 3015. Spanish Composition and Communication. (4 cr. Prereq—[1004 or 1014], GPT high pass) Comprehending written/spoken texts. Speaking, reading, writing beyond intermediate level.


Span 3022. Advanced Business Spanish. (4 cr. Prereq—[1014 or 1004 or equiv], GPT in Spanish) Vocabulary of Spanish business terms, Skills in report writing, proper format for business/formal communications. Developing conversational fluency on trade-related topics.

Span 3104W. Analysis and Interpretation of Texts. (3 cr; A-F only. Prereq—[3015, GPT high pass] or [A, A]) Various ways of understanding structure of diverse texts, interpreting their meaning.

Span 3105W. Introduction to the Study of Hispanic Civilizations. (3 cr. Prereq—[3015, GPT high pass] or [A, A]) Historical/cultural readings generated by integration of Americas into emerging world system via Spanish/Portuguese empires.

Span 3107W. Introduction to the Study of Hispanic Linguistics. (3 cr. Prereq—[3015, GPT high pass] or [A, A]) Phonology, morphology, syntax, semantics, sociolinguistics, history of Spanish language. Hispanic linguistic as historical discipline. Its relationships with social, cultural, literary studies.

Span 3211. Literary Discourses of Imperial Spain, 1492-1800. (3 cr) Prereq—3104, honors) Major literary genres of Spain (epic, lyric, narrative prose, drama, novels, essays) from Middle Ages/Golden Age to Enlightenment. Representative works (ballads, picareque “vidas,” tragedies, mystical verse, novellas) examined within historical/cultural contexts.

Span 3211H. Honors: Literary Discourses of Imperial Spain, 1492-1800. (3 cr; A-F only. Prereq—3211H. Prereq—3104) Honors Major Spanish literary genres (epic, lyric, narrative prose, drama, novels, essays) from Middle Ages and Golden Age to the Enlightenment. Representative works (ballads, picareque “vidas,” tragedies, mystical verse, novellas) examined within historical/cultural contexts.

Span 3212. Literary Discourses of Modern and Contemporary Spain (1800-1870). (3 cr; A-F only. Prereq—3212) Representative works of fiction, drama, poetry, essay, and film of the past two centuries. Intellectual and literary movements from romanticism to modernism.

Span 3212H. Honors: Literary Discourses of Modern and Contemporary Spain (1800-1870). (3 cr; A-F only. Prereq—3212H, Prereq—3104) Honors Major Spanish literary genres (epic, lyric, narrative prose, drama, novels, essays) from Middle Ages and Golden Age to the Enlightenment. Representative works (ballads, picareque “vidas,” tragedies, mystical verse, novellas) examined within historical/cultural contexts.

Span 3213H. Literary Discourses of Modern and Contemporary Spain (1870-1939). (3 cr; A-F only. Prereq—3213H, Prereq—3104) Honors Major Spanish literary genres (epic, lyric, narrative prose, drama, novels, essays) from Middle Ages and Golden Age to the Enlightenment. Representative works (ballads, picareque “vidas,” tragedies, mystical verse, novellas) examined within historical/cultural contexts.
Span 3222. Discourses of Nation Building and Modernization in Latin America. (3 cr; 3422. Prereq—4105 or 3105 or #). Development of Spanish American modernity, its literary expression since independence from colonial rule. Case studies (e.g., Cuba).

Span 3222H. Honors: Discourses of Nation Building and Modernization in Latin America. (3 cr; A-F only. Prereq—3105 or 3105 honors). Development of modernity in Spanish America, its literary expression since independence from colonial rule. Case studies (e.g., Cuba).

Span 3401. Service Learning in the Chicano/Latino Community. (3 cr. Prereq—3015, GPT). Students participate in Spanish-speaking community organizations; analyzes academic materials dealing with race, class, gender, and current patterns of power in the United States, roles of citizens within system; and relate this to their community experience.


Span 3501H. Honors: Spanish Civilization, Roots of Modern Spain and Latin America. (3 cr; A-F only. §3411, §3501). Prereq—3105 Honors) Customs, lifestyles, art, and culture from coexistence of Christians, Moors, and Arabs during reconquest to national unification. Discoveries/conquests up to “modern state” and political crises of early 19th century.

Span 3502. Spanish Civilization: Modern Spain. (3 cr. Prereq—3105) Spanish culture from the beginning of the 19th century to the present. Focus on cultural change and its conflicts as represented in Spanish art, literature, and film.

Span 3502H. Honors: Spanish Civilization - Modern Spain. (3 cr; A-F only. Prereq—3105, honors) Spanish culture from beginning of 19th century to present. Focus on cultural change and its conflicts as represented in Spanish art, literature, and film.

Span 3510. Issues in Hispanic Cultures. (2-3 cr [max 9 cr; A-F only. §3411, §3501]). Prereq—3105, Honors) Practices that have shaped cultural identity of Spanish-/Portuguese-speaking areas. Folklore, religion, armed conflict, drug traffic, language/ citizenship, political movements, commodification of national myths/icons. Topics vary.

Span 3510H. Honors: Issues in Hispanic Cultures. (2-3 cr [max 9 cr; A-F only. Prereq—3510, honors) Practices that have shaped cultural identity of Spanish-/Portuguese-speaking areas. Folklore, religion, armed conflict, drug traffic, language/ citizenship, political movements, commodification of national myths/icons. Topics vary.

Span 3512. Modern Latin American Civilization. (3 cr; A-F only, 3422, 3512H). Prereq—4105 or 3105 or #). Impact of various forms of modernization on symbolic production in Latin American racial, ethnic, class relations, institutional, and ideological structures.

Span 3512H. Honors: Modern Latin American Civilization. (3 cr; A-F only. §3412, §3512, Prereq—3105) Prereq—4105 or 3105 or #). Impact of various forms of modernization on symbolic production in Latin American racial, ethnic, class relations, institutional, and ideological structure.

Span 3601. A Social History of Marginals and Social Offenders. (3 cr) Social history of deviance using a series of first-person narratives by Hispanic authors who lived “marginal” lives and wrote about them. Taught in English.

Span 3606. Human Rights Issues in the Americas. (3 cr; Prereq—Non-Span [major or minor]; taught in English). Cultural/symbolic implications of selected human rights issues involving inter-American relations.

Span 3609. Commodities and National Myths. (3 cr) Influence on Latin American national identities of selected commodities produced for the world market. Taught in English.

Span 3612. The Man of La Mancha and Quixotic Discourse. (3 cr) Narrative techniques and points of view in [Don Quixote]; historical, cultural, and intellectual conditions under which the novel was read and debated. Taught in English.

Span 3653. Contemporary Latino and Latin American Drama Written in English. (3 cr) Established works and works-in-progress of the most active Latino playwrights in the United States and historical, political, and cultural developments that make them possible. Lectures, discussion, performances, and visual material. Taught in English.


Span 3701H. Honors: Structure of Spanish—Phonology. (3 cr; A-F only. §3701). Phonetics/phonology of modern Spanish. Regional/social variants of the language in Spain and Spanish America.

Span 3702. The Structure of Spanish: Morphology and Syntax. (3 cr. Prereq—§3701 or #). Derivational and inflectional morphology. Using linguistic concepts such as morpheme, flexional affix, noun phrase, subject, subordination, and coordination to identify different morphological and syntactic components of Spanish.

Span 3702H. Honors: Structure of Spanish— Morphology and Syntax. (3 cr; A-F only. Prereq—3107 or #). Derivational/inflectional morphology. Using morpheme, flexional affix, noun phrase, subject, subordination, and coordination to identify different morphological/syntactic components of Spanish.


Span 3703H. Honors: Origins and History of Spanish and Portuguese. (3 cr; A-F only. Prereq—3107 or #). Relationships with Latin. Phonetic, morphological, syntactic, and sociolinguistic aspects of diachronic variation.

Span 3704. Sociolinguistics of the Spanish-Speaking World. (3 cr. Prereq—3107) Social variants of Spanish dialects, Spanish in contact with other languages, bilingualism, language attitudes, pragmatic analysis of Spanish. Impact of recent cultural, political, and socioeconomic transformations on language.


Span 3730. Topics in Hispanic Linguistics. (3 cr; max 3 cr). Prereq—3107 or §3701 or [A, §].

Span 3730H. Honors: Topics in Hispanic Linguistics. (3 cr; A-F only. Prereq—3107 or #). Honors Topics specified in Class Schedule.

Span 3800. Film Studies in Spanish. (2-3 cr [max 9 cr]; A-F only. Prereq—3104 or 3105 or (A, §)). Films from Spanish-speaking worlds in their historical, (geo)political, and socio-economic contexts. Production/consumption, popular/high cultures, and national/trans-national identities considered within various theoretical backgrounds. Films from various countries analyzed under interdisciplinary framework noting cinematographical rhetorics.

Span 3800H. Honors: Film Studies in Spanish. (2-3 cr [max 9 cr]; A-F only. Prereq—3104 or 3105 or (A, §)). Focus on a central theme related to important groups of writers, literary movements, trends, critical approaches, and methods. Topics specified in Class Schedule.

Span 3810. Topics in Spanish Peninsular Literature. (3 cr [max 9 cr]; A-F only. Prereq—3104 or [A, §]). Focus on a central theme related to important groups of writers, literary movements, trends, critical approaches, and methods. Topics specified in Class Schedule.

Span 3910. Topics in Spanish American Literature. (3 cr [max 9 cr]; A-F only. Prereq—3104 or [A, §]). Focus on a central theme related to important groups of writers, literary movements, trends, critical approaches, and methods. Topics specified in Class Schedule.

Span 3920. Topics in Spanish-American Literature. (3 cr [max 9 cr]; A-F only. Prereq—3104 or A §). Central theme related to important groups of writers, literary movements, trends, critical approaches, and methods. Topics specified in Class Schedule.

Span 3920H. Honors: Topics in Spanish-American Literature (3 cr [max 9 cr]; A-F only. Prereq—[3104 or A, §]. Honors) Central theme related to important groups of writers, literary movements, trends, critical approaches, and methods. Topics specified in Class Schedule.

Span 3940. Figures in Spanish Peninsular Literature. (3 cr [max 9 cr]. §3340, §3940H). Prereq—3104 or #). Major writer or group of writers whose work has had an impact on Spanish thought or literature or analysis of social patterns. Figures specified in Class Schedule.

Span 3940H. Honors: Figures in Spanish Peninsular Literature. (3 cr [max 9 cr]; A-F only. Prereq—3104 or §). Major writer or group of writers whose work has had an impact on Spanish thought, literature, or analysis of social patterns. Figures specified in Class Schedule.

Span 3950. Figures in Spanish American Literature. (3 cr [max 9 cr]; A-F only. Prereq—3104 or §). Major writer or group of writers whose work has had an impact on Spanish thought, literature, or social problems. Figures specified in Class Schedule.

Span 3950H. Honors: Figures in Spanish-American Literature. (3 cr [max 9 cr]; A-F only. Prereq—[3104 or §]). Honors Major writer or group of writers whose work has had an impact on Spanish thought, literature, or social problems. Figures specified in Class Schedule.
Span 3970. Directed Studies. (1-4 cr [max 9 cr].
Prereq–A, A-, A-.) Guided individual reading or study in Hispanic linguistics, language acquisition, cultural studies, and peninsular, Latin American, and U.S. Latino theatre/literatures.

Span 3972V. Honors: Graduation Seminar. (3 cr; A-F only. §3972W, §3974. Prereq–31 cr of 3xxx, honors, ∆.) Work on major paper in the context of class participants.

Span 3972W. Graduation Seminar. (3 cr; A-F only. §3972W, §3974. Prereq–31 cr of 3xxx, ∆.) Work on major paper in the context of class participants.


Span 5012. Advanced Problems in the Spanish Language. (2 cr; A-F only.) Development of oral proficiency in Spanish. Participants choose section of course based on their current ACTFL level of Spanish language proficiency. Problematic aspects of Spanish pronunciation, grammar, idiomatic expressions reviewed according to class participants.

Span 5016. The Literature of the Reconquest and Feudal Spain. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish) The major literary genres developed in Spain from the Reconquest to 1502, with reference to the crucial transformations of the Middle Ages, including primitive lyric, epic, clerical narrative, storytelling, debates, collections, chronicles, “exempla,” and the Celestina (1499–1502).

Span 5017. The Literature of the Spanish Empire and Its Decline. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or Portuguese) Major Renaissance and Baroque works of the Spanish Golden Age (16th- and 17th-century poetry, nonfictional prose, drama) examined against the historical background of internal economic decline, national crisis, and ideological apparatus developed by the modern state.

Span 5018. Don Quixote. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or Portuguese) Analysis of Cervantes’ Don Quixote in its sociohistorical context; focus on the novel’s reception from the romantic period to postmodern times.

Span 5019. The Crisis of the Old Regime: Spanish Literature of the Enlightenment and Romanticism. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or #) Major literary works and intellectual movements and conflicts represented in written culture, of the 18th and early 19th centuries (1680–1845), examined as expressions of the long crisis of Spain’s Old Regime and the rise of bourgeois liberalism.

Span 5010. Discursive Formations at the Threshold of 20th-Century Spain. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or #) Theory and representative examples of the realista/naturalist novel (Galván, Pardo Bazán) in the context of its antecedents (“costumbrismo”), opposes the idealist/voz de la época tradition, and turn-of-the-century innovations of modernism and the “generation of 1898.”

Span 5101. Contemporary Spanish Literature Since 1915. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or #) Major literary works and movements in Spain from 1915 to 2000. Nietzschean nihilism; surrealism; social realism; literatures of dictatorship and exile; postmodernism. Poetry, novel, drama, essays, film, video/TV; problems of literary history.

Span 5221. Spanish Drama in Performance: 17th-Century Comedia. (3 cr. Prereq–Three 3xxx or 5xxx literature courses or #) Major dramatists of the Spanish comedia (e.g., Cervantes, Lope, Tirso, Calderón). Traditional genres such as tragedy, farce, interludes or auto sacramentales and problems of honor, blood purity, free will, city vs. country, and poetic justice examined against the background of cultural and social history.

Span 5234. Feminism and Literature in Spain. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or Portuguese or #) Spanish feminist thought and practice; literature, cultural discourse, literary and critical theory.


Span 5526. Creole Consciousness and Mercantilist Culture. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish) Discourse production in Spanish America between 1492 and 1700. Conquest and colonial writing and counterwriting; historical origin and evolution of the impact of cultural, political, ideological, and socioeconomic factors.

Span 5527. National Literary Consciousness and Free Trade. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish) Literary movements as part of the process of forming nation-states in Spanish America.

Span 5528. Popular Literary Consciousness: 1890-1950. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or Portuguese or #) Spanish-American literature between the eve and aftermath of the two world wars. Impact of modernization, industrialization, and nationalistic and populist thought on emergence of distinctive writing, thematic trends, and literary genre conventions.

Span 5529. National Affirmation and Transnationalization. (3 cr. Prereq–Three 3xxx or 5xxx literature courses in Spanish or #) Literary trends of the contemporary period (1950 to present) as a reaction to internal social demands for development of independent national cultures and in response to international cultural pressures.

Span 5531. Hispanic Literature of the United States. (3 cr. Prereq–Three 3xxx or 5xxx Spanish or Portuguese literature courses or #) Interdisciplinary approach providing a framework for deconstructing issues of national identity, marginalization, and gender. U.S. Hispanic theatre/literature and its ethnic diversity, regional variations, cultural links, and scope of its genres.

Span 5532. Literature and National Disintegration. (3 cr) Literary reaction to contemporary structural changes in world economic system (1970 to present). Effects on literature as institution. Texts related to core literary topics; historical origin and evolution of Latin American feminism in thought and practice; literature, cultural discourse, literary theory.

Span 5536. Feminism and Literature in Latin America. (3 cr. Prereq–Three 3xxx or 5xxx lit courses in Spanish or Portuguese or #) Latin American feminism in thought and practice; literature, cultural discourse, literary theory.

Span 5701. History of Ibero-Romance. (3 cr. Prereq–3703, two other 3xxx or 5xxx Spanish linguistics courses or #) Origins and developments of Ibero-Romance languages; evolution of Spanish, Portuguese, and Catalan.

Span 5711. The Structure of Modern Spanish: Phonology. (3 cr. Prereq–3701, two 3xxx or 5xxx Spanish linguistics courses or #) Formulating and evaluating a phonological description of Spanish. Approaches to problems in Spanish phonology within metrical, autosegmental, and lexical phonological theories.

Span 5712. The Structure of Modern Spanish: Morphology. (3 cr. Prereq–#) Evaluating morphological theories and descriptions of Spanish. Examining of phonological and syntactic effects on morphology.

Span 5713. The Structure of Modern Spanish: Syntax. (3 cr. Prereq–5701 or #) Linguistic types/processes that appear across languages.Grammatical relations, word order, transitivity, subordination, information structure, grammaticalization. How these are present in syntax of Spanish.

Span 5714. Theoretical Foundations of Spanish Syntax. (3 cr. Prereq–#) Applying semantic theory to Spanish: conceptual organization and the structuring of experience; meaning and cultural values; semantic fields; categorization and prototypes; cognitive model theory; metaphor, metonymy, and mental imagery as source and change of meaning.

Span 5716. The Structure of Modern Spanish: Pragmatics. (3 cr. Prereq–#) Concepts used in current literature in Spanish pragmatics, such as deixis, presupposition, conversational implicature, speech act theory, and conversational structure.

Span 5721. Spanish Laboratory Phonology. (3 cr; A-F only. Prereq–{5711, honors} or grad student or #) Core literature on Spanish laboratory phonology. Phonology from a laboratory perspective. Students evaluate laboratory research methodologies, perform basic acoustic analyses, and design laboratory phonology studies.

Span 5731. Spanish Dialectology: Regional and Social Dialects of Modern Spain. (3 cr. Prereq–Three 3xxx or 5xxx linguistics courses in Spanish or #) Major dialect areas of Spain, with distinguishing phonological, morphological, lexical, and syntactic variations of each. Impact of recent cultural, political, and socioeconomic transformations on language.

Span 5732. Spanish Dialectology: Regional and Social Dialects of Modern Spanish America. (3 cr. Prereq–Three 3xxx or 5xxx linguistics courses in Spanish or #) Major dialect areas of Spanish America, with distinguishing phonological, morphological, lexical, and syntactic variations of each. Their historical origin and evolution and the impact of cultural, political, and socioeconomic transformations on the language.

Span 5800. Spain’s Image and the Hispanic Culture (Towards the XXI Century). (1 cr; A-F only) Contemporary Spanish society from perspectives of humanities, social sciences. Major sociocultural changes in Spain during 20th century. Emphasizes current situation, developments leading into 21st century. Literature, history, politics, geographical/ regional diversity, art, music, cinema.

For definitions of course numbers, symbols, and abbreviations, see page 296.
Span 5910. Topics in Spanish Peninsular Literature. (3 cr. [max 9 cr.] Prereq—Three 300x or 500x literature courses in Spanish or Portuguese) Problems in Spanish cultural history and their applicability to studies of artistic movements, ideological trends, formal methods, or literary genres. Topics specified in Class Schedule.

Span 5920. Topics in Spanish-American Literature. (3 cr. [max 9 cr.] Prereq—3104 or A) Spanish-American literature analyzed according to important groups, movements, trends, methods, and genres. Specific approaches depend on topic and instructor. Topics specified in Class Schedule.

Span 5930. Topics in Ibero-Romance Linguistics. (3 cr. [max 9 cr.] Prereq—#) Problems in Hispanic linguistics; a variety of approaches and methods.

Span 5970. Directed Readings. (1–4 cr. [max 9 cr.] Prereq—MA or PhD candidate, #.) Students must submit reading plans for particular topics, figures, periods, or issues. Readings in Spanish and/or Spanish-American subjects.

Span 5985. Sociolinguistic Perspectives on Spanish in the United States. (3 cr. Prereq—Three 300x or 500x linguistics courses in Spanish or #) Sociolinguistic analysis of issues such as language maintenance/shift in U.S. Latino communities, code switching, attitudes of Spanish speakers toward varieties of Spanish and English, language change in bilingual communities, and language policy issues.

Span 5990. Directed Research. (1–4 cr. [max 9 cr.] Prereq—A, #.)

SpPt 3256. Latin American Cultural Discourse. (3 cr. Prereq—Span 3105) Cultural assumptions in current modes of interpreting Latin American reality. Representative texts are analyzed.


SpPt 3605. Symbolic Expression in Hispanic Politics. (3 cr) Political upheavals, national liberation movements, and civil wars in Spain, Latin America, Portugal, the Portuguese-speaking countries in Africa, and the Hispanic population in the United States, either individually or in various forms of inter-relations. Political activity and symbolic expression beyond literary forms of politics.


SpPt 5930. Selected Topics in Hispanic Cultural Discourse. (3 cr. [max 4 cr. only, Prereq—Reading knowledge of Spanish and Port] Cultural discourses in Spanish- and Portuguese-speaking areas. Historical intersections and divergences. Taught in Spanish and/or Portuguese; English when cross-listed. Topics specified in the Class Schedule.

SpPt 5999. The Teaching of College-Level Spanish: Theory and Practice. (3 cr. Prereq—Grad or #) Theoretical grounding in the general principles of second language acquisition and guidance with their practical applications to the teaching of first- and second-year Spanish at the college-level.

Sport Studies (SpSt)

School of Kinesiology

College of Education and Human Development

SpSt 1701. Introduction to Sport Studies. (2 cr; A-F only) Scope/motive of the study of sport from a sociological, psychological, historical, economic, and scientific perspective. Issues in sport.

SpSt 3111. Sports Facilities. (2 cr; A-F only. Prereq—SpSt majors only) A general identification of sports facilities including the special features that make them unique. Emphasis on understanding the role and purpose of planning for such facilities.

SpSt 3112. Applied Sport Science. (2 cr; A-F only. Prereq—SpSt majors only) Introduction to the historical discovery, transitional development, and current application of basic scientific principles and technology to the improvement of sport performance.

SpSt 3142. Organization and Management of Sport. (3 cr; A-F only. Prereq—SpSt majors only) Principles, policies, and procedures involved in the administration and management of sports programs at the intercollegiate and intercollegiate levels.

SpSt 3421. The Business of Sport. (2 cr; A-F only. Prereq—SpSt majors only) Overview of the economic and business aspects of professional, collegiate, school-based and amateur sport; financing issues and methods; economic impact of sport on communities, regions, and states; the sport and leisure market.

SpSt 3501. Sport in a Diverse Society. (3 cr; A-F only. Prereq—SpSt) Relationship between sport and contemporary social institutions (politics, religion, economics, education, mass media). Emphasizes groups/individuals who have historically been marginalized or excluded from sport participation. Variables such as race, sex, social class, sexual orientation, physical disability also emphasized.

SpSt 3601. Ethics and Values in Sport. (2 cr; A-F only. Prereq—SpSt majors only) The study of violence, demonstrative behavior, sportsmanship, and other ethical issues involved in the playing of sport, and in the management and governance of the sport industry. (3161 recommended)

SpSt 3611. Sport Psychology. (2 cr; A-F only. Prereq—SpSt majors only) Introduction to sport psychology. Examines people and their behavior in sport contexts.

SpSt 3621. Applied Sport Psychology. (2 cr; A-F only. Prereq—SpSt majors only) Understanding psychological theories and techniques as they apply to sport performance and the personal growth of sport participants.

SpSt 3631. Sport Promotion and Programming. (2 cr; A-F only. Prereq—SpSt majors only) Scheduling and management of sports events; different program formats; publicity and promotion of sport; the sport product; pricing issues.

SpSt 3641. Training and Conditioning for Sport. (2 cr; A-F only. Prereq—Kin or SpSt) major Overview of history, development, current philosophies of physical training methods used in sport. Theory, scientific basis for training methods, methods for evaluation/prescription.

SpSt 3661. Legal Aspects of Sport. (2 cr; A-F only. Prereq—SpSt majors only) Survey of legal issues in sport, including governance, contracts, civil rights, civil liberties, torts, due process, and employment and work-related legalities.

SpSt 3881W. Senior Seminar in Sport Studies. (3 cr; A-F only. Prereq—SpSt majors only, completion of major coursework) Presentations and discussions on sport-related topics of interest.

SpSt 3996. Practicum: The Sport Experience. (1-10 cr) (max 10 cr); S-N only. Prereq—3881) Practical experience in one or more sport settings.

Statistics (Stat)

College of Liberal Arts

Stat 1001. Introduction to the Ideas of Statistics. (3 cr. Prereq—High school algebra) Controlled vs. observational studies; presentation and description of data; chance variation; correlation and causality; confidence intervals; statistical tests.

Stat 1905. Freshman Seminar. (3 cr. [max 6 cr.]; A-F only) Topics specified in Class Schedule.


Stat 3022. Data Analysis. (4 cr. Prereq—3011 or 3021) Practical survey of applied statistical inference and computing covering widely used statistical tools: multiple regression, variance analysis, experiment design, nonparametric methods, model checking and selection, variable transformation, categorical data analysis, logistic regression.


Stat 4893W. Senior Paper. (1 cr. Prereq—Stat major) Either (1) paper on specialized area or (2) consulting project or (3) original computer program. Directed study.

Stat 4931. Topics in Statistics. (3 cr) Topics vary according to student needs and available staff.

Stat 4932. Topics in Statistics. (3 cr. Prereq—#) Topics vary according to student needs and available staff.
### Course Descriptions

#### Statistics

- **Stat 5021. Statistical Analysis.** (4 cr. §3011. Prereq–College algebra or #; Stat course recommended) Intensive introduction to statistical methods for graduate students needing statistics as a research technique.
  - **Prereq:** 3021 or 3022 or 4102 or 5021 or 5102 or 8102, Math 1272

- **Stat 5041. Bayesian Decision Making.** (3 cr. Prereq–4101 or 5021 or 5101 or #) Axioms for subjective probability/utility. Optimal statistical decision making. Sequential decisions/decision trees. Bayesian data analysis.


- **Stat 5201. Sampling Methodology in Finite Populations.** (3 cr. Prereq–3021 or 3022 or 5021 or #) Simple random, systematic, stratified, unequal probability sampling. Ratio, model based estimation. Single stage, multistage, adaptive cluster sampling. Spatial sampling.

- **Stat 5302. Applied Regression Analysis.** (4 cr. Prereq–3022 or 4102 or 5021 or 5102 or #) Simple, multiple, and polynomial regression. Estimation, testing, prediction. Use of graphics in regression. Stepwise and other numerical methods. Weighted least squares, nonlinear models, response surfaces. Experimental research/applications.


- **Stat 5501. History of Cinema and Media Culture.** (3 cr) Genealogy of cinema in relation to other media, notably photography, radio, television/video and the Internet. Representative films from decisive moments in global development of cinema. Rise/fall of Hollywood studio system, establishment of different national cinemas, cinematic challenges to cultural imperialism, emergence of post-cinematic technologies.

- **SCMC 3177. On Television.** (4 cr. §5SCCL 3177) Key debates in the history, theory, and criticism of television. Focuses on critical/creative “readings” of television’s past/present forms. TV’s influence on film, music, and digital media.

- **SCMC 5001. Critical Debates in the Study of Cinema and Mass Culture.** (3 cr) Basic concepts in historical/international debates over production/reception of mass culture. Focuses on critical/creative “readings” of television’s past/present forms. TV’s influence on film, music, and digital media.

- **SCMC 1201. Introduction to Cinema and Media Culture.** (3 cr) Basic concepts in historical/international debates over production/reception of mass culture. Focuses on critical/creative “readings” of television’s past/present forms. TV’s influence on film, music, and digital media.

- **SCMC 3001. History of Cinema and Media Culture.** (3 cr) Genealogy of cinema in relation to other media, notably photography, radio, television/video and the Internet. Representative films from decisive moments in global development of cinema. Rise/fall of Hollywood studio system, establishment of different national cinemas, cinematic challenges to cultural imperialism, emergence of post-cinematic technologies.

- **SCMC 5003. Critical Debates in the Study of Cinema and Mass Culture.** (3 cr) Basic concepts in historical/international debates over production/reception of mass culture. Focuses on critical/creative “readings” of television’s past/present forms. TV’s influence on film, music, and digital media.

- **Swed 1001. Beginning Swedish.** (5 cr. §3011. Prereq–1003) Emphasis on developing intermediate mid-high proficiency in listening, reading, speaking, and writing. Contextualized work on grammar and vocabulary is supported by work with authentic readings and essay assignments.

- **Swed 1002. Beginning Swedish.** (2 cr. Prereq–Passing score on GPT) Designed to help students achieve advanced proficiency in Swedish. Discussion of fiction, film, journalistic, and professional prose is complemented by grammar and vocabulary building exercises and a systematic review of oral and written modes of communication.

- **Swed 5031. Advanced Swedish.** (4 cr. Prereq–Passing score on GPT) Designed to help students achieve advanced proficiency in Swedish. Discussion of fiction, film, journalistic, and professional prose is complemented by grammar and vocabulary building exercises and a systematic review of oral and written modes of communication.

- **Swed 5301. Advanced Swedish.** (4 cr. Prereq–Passing score on GPT) Designed to help students achieve advanced proficiency in Swedish. Discussion of fiction, film, journalistic, and professional prose is complemented by grammar and vocabulary building exercises and a systematic review of oral and written modes of communication.

- **Swed 5401. Intermediate Swedish.** (2 cr. §1001. Prereq–Passing score on GPT) Designed to help students achieve advanced proficiency in Swedish. Discussion of fiction, film, journalistic, and professional prose is complemented by grammar and vocabulary building exercises and a systematic review of oral and written modes of communication.

- **Swed 5501. Intermediate Swedish.** (2 cr. §1003. Prereq–Passing score on GPT) Designed to help students achieve advanced proficiency in Swedish. Discussion of fiction, film, journalistic, and professional prose is complemented by grammar and vocabulary building exercises and a systematic review of oral and written modes of communication.

- **Swed 5601. Nonparametric Methods.** (3 cr. Prereq–3022 or 4102 or #) Order statistics. Classical rank-based procedures (e.g., Wilcoxon, Kruskal-Wallis). Goodness of fit. Topics may include smoothing, bootstrap, and generalized linear models.

- **Swed 5701. Topics in Statistics.** (3 cr) Topics vary according to student needs and available staff.

- **Swed 5702. Topics in Statistics.** (3 cr) Topics vary according to student needs and available staff.

- **Swed 5993. Tutorial.** (1-6 cr [max 12 cr]. Prereq–#) Directed study in areas not covered by regular offerings.

#### Teaching English as a Second Language (TESL)

- **Institute of Linguistics, ESL, and Slavic Languages and Literatures**

- **College of Liberal Arts**

- **TESL 1904. Freshman Seminar.** (3 cr; A-F only) Topics vary. See Class Schedule.

- **TESL 1905. Freshman Seminar.** (3 cr; A-F only) Topics specified in Class Schedule.

- **TESL 3001. Basics in Teaching English as a Second Language.** (4 cr. §3001. Prereq–Have studied another language, 550 TOEFL score [if non-native speaker]) Basic orientation to current theories/methods of English as a second language (ESL) instruction. Emphasizes methodologies for teaching/assessing listening, speaking, pronunciation, reading, writing, and grammar skills. Contexts of teaching English to adults in the United States and abroad. Internship at school or agency teaching ESL.
TSEL 5401. Language Analysis for Teachers of English as a Second Language. (4 cr. Prereq–Ling 5001) Overview of the structure of the English language geared to the needs of teachers of English to speakers of other languages. Study the structures of English from the point of view of second-language speakers as well as native speakers. Phonetics, phonology, morphology, and some aspects of the syntax of the English language. Part of a two-course sequence.

TSEL 5402. Language Analysis for Teachers of English as a Second Language. (4 cr. Prereq–5401, Ling 5001) Overview of the structure of the English language geared to the needs of teachers of English to speakers of other languages. Study the structures of English from the point of view of second-language speakers as well as native speakers. More complex structures of English syntax, as well as English semantics, pragmatics, and discourse structures. Second in a two-course sequence.

TSEL 5721. Methods in Teaching English as a Second Language. (3 cr. Prereq–Ling 3001 or 5001 or #) Introduction to methods for teaching English as a second language to adults.

TSEL 5722. Practicum in Teaching English as a Second Language. (4 cr. (max 8 cr.; S-N only. Prereq–[5401 or 5401], [5402 or 5402], 5721, ESL major or ESL minor) or #) Observation of, and practice in, teaching English as a second language to adults at college or university level.


TSEL 5724. Introduction to Language Assessment. (3 cr. A-F only) How to engage in meaningful, appropriate, and fair second-language assessment practices; interpret test results; and construct new forms of assessment.

TSEL 5900. Topics in Second Language Learning and Teaching. (1-4 cr. [max 16 cr]) Topics vary. See Class Schedule.

TSEL 5910. Seminar in Teaching English as a Second Language. (3 cr. (max 9 cr.) Prereq–#) Topics related to English as a second language and applied linguistics. Topics specified in Class Schedule.

TSEL 5993. Directed Studies. (1-4 cr. [max 9 cr. Prereq–A, #]) Directed study for teaching English as a second language.


Th 1112. Drama and the Media—Condensed Version. (3 cr. Prereq–Th major or #) Drama/cultural values implicit in media. Study of primary texts (biography, history, the novel, plays); video clips; complete films. How film/television shape collective cultural identity. Seven weeks.

Th 1301. Beginning Acting for Non-Theatre Majors. (3 cr. Prereq–1101 or 1101) Background/techniques of acting as viewed/practiced in theatre, society, and student’s own relationships.


Th 1322. Creating the Performance. (3 cr. A-F only. Prereq–1321 [taken preceding sem or summer session]) Introduction to responsibilities/techniques of modern stage director as creative/interpretive artist. Creation of directed performances/existing forms, from happenings to traditional psychological/poetic realism.

Th 1351. Vocal Production and Beginning Movement for Actors. (3 cr. Prereq–1101) Part I: exercises to develop abdominal breathing, tonal placement, and clear articulation; analysis/ performance of prose, poetry, and dramatic texts. Part II: body movement/relaxation combined with acting technique leading to individual/group performance.


Th 1391. BFA Acting I. (7 cr; A-F only. Prereq–Accepted into BFA acting program) Acting: voice/movement. First section in a sequence of eight. Concentrates on building foundation for further work in the program.

Th 1392. BFA Acting II. (7 cr; A-F only. Prereq–1391) Core curriculum for BFA Actor Training Program in acting, voice/movement. Second section in a sequence of eight. Concentrates on story-telling and on deepening work of previous semester.

Th 1393. BFA Acting III. (7 cr; A-F only. Prereq–1392) Interpreting dramatic material. Third in sequence of eight.

Th 1394. BFA Acting IV. (7 cr; A-F only. Prereq–1393) Interpreting dramatic material. Fourth in sequence of eight.

Th 1405H. Theatre: Spaces and Practices. (2 cr. Prereq–[1101 or #1101, honors] Various theatre subjects developed by pool of instructors.

Th 1905S. Freshman Seminar. (3 cr [max 6 cr.; A-F only] Topics specified in Class Schedule.

Th 1909W. Topics: Freshman Seminar. (3 cr. A-F only. Prereq–Fr or max 6 cr.) Topics specified in Class Schedule.

Th 1910W. Topics: Freshman Seminar. (3 cr; A-F only. Prereq–Fr with no more than 24 cr) Topics specified in Class Schedule.

Th 1911W. Freshman Seminar: Theatre, Entertainment With Attitude. (3 cr; A-F only. Prereq–Fr or 24 cr) Richness/diversity of live theatre as performance/text. Developing critical language/eye with which to think about live performance. Students attend performances at Twin Cities theatres. In-class discussions, talks with theatre/dance professionals.

Th 3100. Theatre Practicum. (1 cr [max 4 cr]; S-N only. Prereq–1101; only two registrations as actor may count toward major) Participation in University Theatre main stage play as actor, construction/running crew personnel, or theatre management operations personnel.

Th 3115. Introduction to Playwriting. (3 cr. Prereq–#) Study of traditional play structure, characterization, dialogue, dramatic action, and theme. Final project is a one-act play.


Th 3171. History of the Theatre: Ancient Greece Through Neo-Classicism. (3 cr. Prereq–Th major or #) History of Western theatre and drama: theatrical practices, staging conventions, and dramatic structure of plays. Ancient to mid-18th century.

Th 3172. History of the Theatre: Age of Enlightenment to Present. (3 cr. Prereq–Th major or #) Theatrical practices, staging conventions, dramatic structure of plays.


Th 3314. Text and the Actor. (3 cr. A-F only. Prereq–1101, 1321) Standard stage speech, International phonetic alphabet transcription, and textual analysis to perform heightened language texts such as Shakespeare/Shavian monologues, Chaucer’s Canterbury Tales, and Beowulf. Videos viewed/discussed.


Th 3331. Physical Approaches to Acting. (3 cr. Prereq–1322, 3314 or #3314) Dynamic physical approach to acting. Expanding expressiveness/creativity. Strengthening connections between physical/verbal expression. Uniting instinct and intellectual analysis. Techniques as advanced by Delaure, Meyerhold, Grotowski, Kantor, Suzuki, Barba, etc., and structured improvisation, are incorporated in solo/collaborative performance projects.


Prereq–1101)
Th 5000. Theatre Design Practicum. (3 cr. Prereq–Grad or #)
Independent projects in production of approved plays as a designer of scenery/properties, costumes, lighting, or sound. (See 5100 for other creative practicums.)
Prereq–3515 or grad or #)
Th 5300. Costume Design. (3 cr [max 9 cr]. Prereq–3515 or grad or #)
Prereq–MFA or # by audition)
Th 4905H. Honors Course: Tutorial Seminar in Theatre History. (4 cr. Prereq–honors, theatre arts; A limit [2 cr for "cum laude or magna cum laude", 4 cr for "summa cum laude") Independent reading/research in preparing honors thesis or selected creative project.
Prereq–Grad or 3515, 3711; #;)
Th 5171. History of the Theatre I. (3 cr)
Theatre as a mirror of society. Aesthetics, philosophy, and practices of theatre arts. Ancient to mid-18th century.
Prereq–3712,[ or sr] or #)
Th 5432. Makeup for the Actor. (2 cr. Prereq–1101–1394) Topics vary. May include functions/aesthetics of stage makeup, application techniques, prosthetics, and facial hair.
Th 5455. Advanced Video Technology. (3 cr. Prereq–4550, 4557) or # Video production techniques. Lighting, camera operation, control room equipment/operation. Chroma and other types of keying. Hands-on training with equipment. Techniques necessary for video production. Students are involved with every aspect of camera and explore within their own projects. 
Prereq–Grad or # by audition)
Th 4901. Senior Seminar. (2 cr. S--only, Prereq–Sr, [Th or Dnce major]; offered fall semester only) Development of senior project, alone or in groups, under guidance of faculty members.
Prereq–Varies by topic)
Th 3950. Topics in Theatre. (1-4 cr [max 8 cr]. Prereq–Varies by topic) Topics specified in the Class Schedule.
Prereq–1394)
Th 5331. Physical Approaches to Acting: Stage Combat. (2 cr. Prereq–MFA or # by audition) Movement for advanced actors: awareness, flexibility, observation, release, improvisation in both verbal and nonverbal physical modes; focus on stage combat.
Th 5333. Physical Approaches to Acting: Period Styles. (2 cr. Prereq–MFA or # by audition) Movement for advanced actors: awareness, flexibility, observation, release, improvisation in both verbal and nonverbal physical modes; focus on period styles of movement.
Prereq–MFA or # by audition)
Th 5334. Physical Approaches to Acting: Mask. (2 cr. Prereq–MFA or # by audition) Movement for advanced actors: awareness, flexibility, observation, release, improvisation in both verbal and nonverbal physical modes; focus on mask work.
Th 5341. Speech for Actors. (2 cr; A-F only. Prereq–MFA or #) Theories of professional voice production, anatomy and physiology of the vocal mechanism and respiratory system, phonetics, tonal placement, vowel standardization, and articulation are applied to dramatic texts.
Th 5432. Classical Text for Actors. (3 cr; A-F only. Prereq–MFA or #) Metrical and rhetorical techniques used in the dramatic texts of Shakespeare and Shaw, as well as textual performance styles from Elizabethan to contemporary. Discussion, presentation, oral reports, and performances.
Prereq–1101 or #)
Th 5131. Shakespeare: Comedies, Romances, and Problem Plays. (3 cr. Prereq–1101 or #) Shakespeare’s plays as live theatre, both for the stage and in various media. Work of actors, directors, and designers in Shakepearan plays.
Th 4321. Career Preparation for the Actor. (3 cr. Prereq–3322) Information/techniques necessary for professional acting career.
Prereq–Grad or #)
Th 5510. Drawing, Rendering, and Painting for the Theatre Designer I. (3 cr. Prereq–3515 or grad or #) Development of skills necessary for presentation of theatre scene/costume designs. Materials, layout, and techniques in scene painting. Basic drawing/graphic skills.
Prereq–1101 or #)
Th 4122. Shakespeare: Histories and Tragedies. (3 cr. Prereq–1101 or #) Shakespeare’s plays as live theatre, both for the stage and in various media. Work of actors, directors, and designers in Shakepearan plays.
Prereq–3515, 3513)
Process, and execution of design/technology from script to production on stage. Costumes/ lighting.
Th 5315. Design and Technical Production II. (4 cr. Prereq–3513) Theory, process, and execution of design/technology from script to production on stage. Scenery/properties.
Prereq–3321)
Th 3391. BFA Acting VI. (7 cr; A-F only, Prereq–1394) Process towards performance. Fifth in sequence of eight.
Th 4320. BFA Acting VIII. (7 cr; A-F only,Prereq–3491) Performance of first three years of training toward performance. Career preparation. Eighth in sequence of eight.
Th 4323. BFA Acting IX. (7 cr; A-F only,Prereq–3491) Performance of first three years of training toward performance. Career preparation. Ninth in sequence of eight.
Prereq–1394)
Th 3390. BFA Acting VII. (7 cr; A-F only, Prereq–3392) Applying first three years of training toward performance. Seventh in sequence of eight.
Th 5553. Video Production Design and Aesthetics. (3 cr. Prereq–4553 or #)
Use of technology in videofilm in making a statement or communicating an idea/emotion. Creativity, sensitivity to an audience. Students explore different creative uses of technologies/medium.

Th 5554. Multimedia Production for Live Performance. (3 cr. Prereq–5553 or #)
Use of multimedia production technologies in actual production. Students apply knowledge/skill in conjunction with an artistic team on a production and are an integral part of the development/realization of that production.

Th 5556. Audio Engineering. (3 cr. Prereq–4555 or #)
Miking/recording techniques specific to music and dramatic dialogue. Students explore recording different styles of music. Hands-on experience in recording hands-on and creating final mixes to a demo CD. Field trips to professional studios and club/concert recordings.

Th 5558. Audio Systems Analysis and Installation. (3 cr. Prereq–4555 or #)
Analyzing, designing, developing specifications, and installing sound systems. Students work from client program lists, with given resources and given spaces, to arrive at best possible audio system. Hands-on experience.

Th 5559. Sound Design for Performance. (3 cr. Prereq–5555 or #)
Audio technology and psychology and their impact on an audience in a performance situation. Communication, design process, psychoacoustics, and script analysis.

Th 5560. Drawing, Rendering, and Painting for the Theatre Designer II. (3 cr. Prereq–5510)
Development of skills necessary for presentation of theatre scene/costume designs. Materials, layout, and techniques in scene painting. Rendering and scene painting skills.

Th 5570. Properties/Scenery Technology. (1-3 cr. Prereq–3515 or grad or #)
Management, structures, upholstery, mask-making, millinery, makeup prosthetics, pattern drafting, and draping. Topics specified in Class Schedule.

Th 5580. Costume Technology. (1-3 cr. max 15 cr. Prereq–3515 or grad or #)
Fabric enhancement techniques, masks, wig-making, millinery, makeup prosthetics, pattern drafting, and draping. Topics specified in Class Schedule.

Th 5590. Theatre Technology Practicum. (1-3 cr. max 15 cr. Prereq–3515 or grad or #)
Individual creative project in technology/craft area of theatre. Practical work in costume, lighting, makeup, props, scenery, sound, or theatre management.

Th 5711. Advanced Stage Direction. (3 cr. Prereq–[4771, # or grad student])

Th 5713. Theory and Practice of Performance. (3 cr. A-F only. Prereq–[3171, 3172, [4177 or 4178], 5711] or grad student)
Traditions of thinking about theatre, from ancient Greece to present, in practical applications. Focuses on epistemological significance of performance in current critical practices of postmodernism, psychoanalysis, and phenomenology.

Th 5714. The Drama of Myth. (3 cr. Prereq–[1322, 3171, 3172] or #)
Role of myth in performance. Students choose a myth and study its iconography, tracing its journey in painting, sculpture, music, and other texts that accumulated around it throughout history. COURSE culminates in creation of a non-traditional performance score that embodies/reveals energies of contemporary culture within ancient metaphor of a chosen myth.

Th 5715. Actor-Director Collaboration. (3 cr. Prereq–grad or 3322, 5711)
Applying advanced acting and directing technique to an artistic, collaborative process that promotes flexibility and creativity. Actors and directors are exposed to a challenging range of roles, styles, and scenes.

Th 5716. Stage Management for the Theatre. (4 cr. Prereq–[1101, 1321, soph] or grad)
Theories, practicalities, and techniques for rehearsal/ performance. Organizing/managing various types of performance venues.

Th 5718. Principles of Theatre Management. (3 cr. Prereq–#)
Nonprofit theatre structure: concept; mission; organization; financial, marketing, fund-raising, and grant-writing strategies. Discussion/guest professionals from Twin Cities’ arts/funding communities.

Th 5753. Text Analysis for Drama. (3 cr. Prereq–5711 or grad)
Tools for intensive textual analysis for advanced directors/designers. Traditional, Aristotelian analysis and contemporary approaches covered through theories/writings of Bertolt Brecht and Howard Barker.

Th 5760. Advanced Stage Management. (2-3 cr. Prereq–5716 or 5716, # (4 cr max for undergrads))
Practical experience in stage management for specific productions of the University Theatre with emphasis on rehearsal and performance.

Th 5780. Advanced Topics in Theatre Management. (2-4 cr (max 8 cr). Prereq–5718)
Study and apply theatre management theories and techniques learned in 5718. Marketing/audience development, fundraising and grant writing, strategies, and financial management of a nonprofit theatre organization.

Th 5950. Topics in Theatre. (1-4 cr (max 20 cr). Prereq–#)
Topics specified in Class Schedule.

Th 5993. Directed Study. (1-5 cr (max 20 cr). Prereq–6)
Thesis, #, A, Q)
Guided individual reading or study.

Toxicology (Txl)

Graduate School

Txl 5011. Principles of Toxicology. (2 cr; A-F only. Prereq–Grad txl major or #)
Introduction to fundamentals of poisoning in individuals and the environment, assessment of potential health hazards, and application of toxicology in various professional careers.

Txl 5195. Veterinary Toxicology. (3 cr; A-F only. Prereq–Grad student or #)
Toxicology of minerals, pesticides, venoms, and various toxins. Identification of poisonous plants. Recognition, diagnosis, and treatment of animal poisons.

Txl 5545. Introduction to Regulatory Medicine. (2-4 cr; A-F only. Prereq–Grad student or #)
Explanation of products requiring pre-market approval and those that may be marketed without approval. Post-market surveillance. Adverse reactions, removal of product from market.

Translation and Interpreting (TrIn)

Institute of Linguistics, ESL, and Slavic Languages and Literatures

College of Liberal Arts

TrIn 1201. Fundamentals of Health Care for Interpreters. (3 cr; A-F only)
Technical vocabulary, oral discourse patterns used by health care providers in talking to patients, family members, Language of American health care interview.

TrIn 1301. American Law for Interpreters. (3 cr)

TrIn 3001. Introduction to Translation. (3 cr. Prereq–Bilingual proficiency in English and the second language of instruction.) Theory of and supervised practice in translation: examination of the processes of re-expressing meaning in a second language. Translation primarily of English language texts concerning public health and safety, legal and voting rights, regulations and procedures, etc., intended for the general public.

TrIn 3101. Introduction to Interpreting. (3 cr. Prereq–3001 recommended, high level of proficiency in spoken English and another language) Practical and theoretical introduction to interpreting in health, human service, and legal settings. Emphasis on understanding the unique role of the interpreter, current models and modes of interpreting, ethical issues and professional standards of practice, and developing pre-interpreting skills.

TrIn 3102. Consecutive Interpreting. (3 cr. Prereq–3101, high level of proficiency in spoken English and in another language) as demonstrated by application) Practice/theory at professional level in interpreting in health, human service, legal settings. Emphasizes professional/client dialogues. Consecutive interpreting skills, vocabulary research/storage, intercultural issues. Analyzing interpretive process. Performance assessment through audio/video taping. Subject languages (e.g., Spanish, Russian, Somali) specified for each section.

TrIn 5900. Topics in Translation and Interpreting. (1-4 cr (max 4 cr. Prereq–#)
Topics specified in Class Schedule.

TrIn 5993. Directed Study. (1-3 cr. Prereq–#, A, Q)
Directed study in translation and interpretation.

University College (UC)

College of Continuing Education

UC 1000. Exploring Educational Options. (1 cr (max 20 cr). S-N only. Prereq–#)
Clarifying expectations, resources, and challenges for transition into (back to) college. Students assess their interests and learning style as they relate to a college major. Internet as means of gaining options for education. Individualized degrees at the University, how to prepare an application for them. Campbell Skills and Interests Survey, Learning Styles Inventory, written assignments. Materials fee: $25.

UC 3075. Directed Study. (1-15 cr. Prereq–#)

UC 3950. Special Topics. (1-4 cr (max 12 cr. A-F only)
Special topics course.

UC 4301. Perspectives: Interrelationships of People and Animals in Society Today. (2 cr) Interrelationships of people and animals from several viewpoints. Social, economic, and health consequences of these relationships, including issues such as pets and people sharing an urban environment, animal rights, and the influence of differences in cultures on animal-human relationships.
UC 4525. Garbage and the Human Environment. (3 cr; A-F only)

Human development, use of natural resources, waste production, pollution of environment, waste management. Comparative look at issues/problems associated with rapid technological development. Laws to control waste production and manage accumulated waste.

UC 5075. Directed Study. (1-4 cr; A-F only)

Directed study.

UC 5950. Special Topics. (1-8 cr; A-F only)

Special topics.

Urban Studies (UrbS)

Department of Geography
College of Liberal Arts

UrbS 1001W. Introduction to Urban Studies: The Complexity of Metropolitan Life. (3 cr; A-F only)§1001

Introduction to the field of Urban Studies and to the subject of cities. Course is broadly interdisciplinary, ranging across spatial, historical, economic, political, and design perspectives, among many others. For majors and interested others.

UrbS 3001W. Introduction to Urban Studies: The Complexity of Metropolitan Life. (3 cr; A-F only)§3001

Introduction to the field of Urban Studies and to the subject of cities. Course is broadly interdisciplinary, ranging across spatial, historical, economic, political, and design perspectives, among many others. For majors and interested others.

UrbS 3201. Urban Studies Colloquium. (1 cr [max 4 cr]; A-F only)

Urban/metropolitan issues. Topics vary to reflect current concerns. In-depth reading, intensive group discussion.

UrbS 3202. Urban Studies Colloquium. (1 cr [max 4 cr]; A-F only)

Urban/metropolitan issues. Topics vary to reflect current concerns. In-depth reading, intensive group discussion.

UrbS 3301W. American Cities As Settings for Cultural Diversity. (3 cr)

Explores cultural diversity in American cities, considering patterns of and reasons for racial and class segregation and intersection. Its foci are the problems, conflicts, and successes of cultural diversity from a multidisciplinary perspective.

UrbS 3500. Urban Studies Workshop. (3 cr [max 9 cr]; A-F only)

Links academic learning to actual urban problems/issues. Focus on specific topic using local community as laboratory. Field work, contact with local institutions/agencies.

UrbS 3751. Understanding the Urban Environment. (3 cr; A-F only)

Examines links between cities and the environment with emphasis on air, soil, water, pollution, parks and green space, undesirable land uses, environmental justice, and the basic question of how to sustain urban development in an increasingly fragile global surrounding.

UrbS 3900. Urban Studies Internship Seminar. (2 cr [max 4 cr]; A-F only. Prereq.-Sr, internship placement, A, F)

Weekly seminar integrates internship experience with academic program.

UrbS 3955W. Senior Paper Seminar. (2 cr; A-F only. Prereq.-A, UrbS Sr, Sr)

Methods/resources for research. Substantial writing.

UrbS 3993. Urban Studies Directed Study. (2-3 cr [max 6 cr]; A-F only. Prereq.-UrbS majors, Sr, A, F)

For students with a specific educational objective that cannot be satisfied through regular curriculum (e.g., foreign study) and for honors students to complete an honors opportunity.

UrbS 5101. The City and the Metropolis: An Exploration. (3-4 cr. Prereq.-Grad or advanced UrbS undergrad with A)

Advanced interdisciplinary examination of complex metropolitan environments using a grounded experiential approach. Examine the topic from historical, spatial, social, economic, political, policy and design perspectives. Day-long or weekend-long field trips are expected.

Urd (Urdu)

Department of Asian Languages and Literatures
College of Liberal Arts

Urd 1001. Introduction to Conversational Urdu. (3 cr)


Urd 1101. Beginning Urdu. (5 cr)

Basic listening, speaking, reading, and writing skills. Emphasizes development of communicative competence.

Urd 1102. Beginning Urdu. (5 cr. Prereq.-1101 or #)

Basic listening, speaking, reading, and writing skills. Emphasizes development of communicative competence.

Urd 3131. Intermediate Urdu. (5 cr. Prereq.-1102 or #)

Development of reading, writing, speaking, and listening skills. Grammar review, basic compositions, oral presentations.

Urd 3132. Intermediate Urdu. (5 cr. Prereq.-3131 or #)

Development of reading, writing, speaking, and listening skills. Grammar review, basic compositions, oral presentations.

Veterinary Pathobiology (VPB)

Department of Veterinary Pathobiology
College of Veterinary Medicine

VPB 2022. General Microbiology. (2 cr. Prereq.-3 cr biol)

Fundamental principles of microbiology: bacterial metabolism, growth, and genetics; biology of viruses and fungi; control of microorganisms; host-microbe interactions; microorganisms and disease; applied microbiology. Intended primarily for non-microbiology majors.

VPB 2032. General Microbiology with Laboratory. (4 cr. Prereq.-3 cr biol)

Fundamental principles of microbiology: bacterial metabolism; growth and genetics; biology of viruses and fungi; control of microorganisms; host-microbe interactions; microorganisms and disease; applied microbiology. Intended primarily for non-microbiology majors.

VPB 5601. Veterinary Parasitology. (4 cr)

Water Resources Science (WRS)

Graduate School

WRS 5001. Introduction to Field Research in Water Resources. (2 cr. Prereq.-Grad WRS major or #)

Introduction to field research techniques and opportunities during two-week summer excursion to regional sites. Data acquisition in large/small lakes, streams, and wetlands for biota and chemical/physical water quality; surface and groundwater hydrologic measurements and sampling.

WRS 5101. Water Resources: Individuals and Institutions. (3 cr. Prereq.-Grad student or #)

Control of water resources by natural system functions, user actions, and influence of social and political institutions. How these controls vary in space and time; complexities of each control and feedbacks among them.

WRS 5241. Ecological Risk Assessment. (3 cr. Prereq.-#)

Evaluating current/potential impact of physical, chemical, and biological agents on ecosystems. Identifying ecological stressors, assessing level of exposure, measuring ecological responses, communicating/managing risks. Class participation, two reaction papers, final exam, small-group project.

Women’s Studies (WoSt)

Department of Women’s Studies
College of Liberal Arts

WoSt 1001W. Introduction to Women’s Studies. (3-4 cr)

U.S. multi-/cross-cultural studies of contemporary social, cultural, and personal conditions of women’s lives. Includes honors recitation.

WoSt 1002W. Politics of Sex. (3-4 cr)

Historical, cultural, psychological, sociopolitical dimensions of analyzing gender/sexuality.

WoSt 1003W. Women Write the World. (3-4 cr)

Concepts in literary studies. Poems, plays, short stories, novels, essays, letters by women from different parts of world. Focuses on lives, experiences, and literary expression of women, including basic concepts of women’s studies.

WoSt 1902. Freshman Seminar. (3 cr; A-F only. Prereq.-Fr or no more than 36 cr)

Topics/description vary. See Class Schedule, Course Guide.

WoSt 1904. Freshman Seminar. (3 cr; A-F only)

Topics specified in Class Schedule.

WoSt 3001W. Sexuality Studies. (3 cr)

Interdisciplinary survey of lesbian, gay, bisexual, and transgender studies. Includes honors recitation.

WoSt 3002. Race, Class, Ethnicity: Women’s Lives in the United States. (3-4 cr)

Comparative study of women/gender, race, and sexuality in two or more U.S. ethnic cultures. Includes honors recitation.

WoSt 3002H. Honors: Race, Class, Ethnicity: Women’s Lives in the United States. (3-4 cr. §3002 Prereq.-Honors)

Comparative study of women/gender, race, class, sexuality in two or more U.S. ethnic cultures. Includes honors recitation.

WoSt 3003W. Gender and Global Politics. (3-4 cr. §3003W. Prereq.-Honors)

Similarities/differences in women’s experiences throughout world from cross-cultural/historical perspective. Uses range of reading materials/media (feminist scholarship, fiction, film, news media, oral history, autobiography). Includes honors recitation.

WoSt 3003W. Gender and Global Politics. (3-4 cr)

Similarities/differences in women’s experiences throughout world from cross-cultural/historical perspective. Uses range of reading materials/media (feminist scholarship, fiction, film, news media, oral history, autobiography). Includes honors recitation.

WoSt 3004V. Honors: Point/Counterpoint: Contemporary Feminist Debates. (3-4 cr. §3004W. Prereq.-Honors)

Affect a woman's continuously developing sense of identity, and age as factors that influence women's roles and experiences over their lives. Women's changing roles in the labor force, in the family, and in the popular culture. Themes include work, family, sexuality, gender ideologies, women's rights, and the different experiences of women based on race, class, religion, and region.

WOST 3409W. Asian American Women's Cultural Production. (3 cr) Diversity of cultures designated "Asian American." Understanding women's lives in historical, cultural, economic, and racial contexts.

WOST 3410. La Chicana. (3 cr) Focus on Chicanas or politically defined women of the Mexican-American community. Method is interdisciplinary emphasizing the importance of historical context and cultural process to any discussion of the Chicana experience.

WOST 3411. Las Mujeres. (3 cr) Focus on Chicanas; women of the Mexican-American community. Exploration of racial, economic, political, and gender issues of concern to all Mexican Americans and diverse Latino cultures.

WOST 3414. Women in Medieval Europe. (3 cr; A-F only. §Hist 3614W) Women's role in family, politics, religion, work, and social movements. Representations of women in religious texts, art, literature, scientific studies, and law. Method/approaches to study of women's history.

WOST 3490. Topics: Comparative and Global Studies. (3 cr) Topics specified in Class Schedule.

WOST 3501. Community, Service, and Self: Dynamics of Gender, Race, and Class. (3 cr. Prereq—WOST major or WOST minor or 6 cr WOST) Combines theoretical exploration of models of community service with hands-on involvement in local communities.

WOST 3502. Community, Service, and Self: Dynamics of Gender, Race, and Class. (3 cr. Prereq—WOST major or 6 cr WOST) Year-long, six-credit offering (with WOST 3501) that combines a theoretical exploration of models of community service with hands-on involvement in local communities.

WOST 3590. Topics: Civic and Community Studies. (3 cr) Topics specified in Class Schedule.

WOST 3890H. Honors Directed Instruction. (1-8 cr [max 12 cr]. §3880H) Directed instruction.

WOST 3890H. Honors Directed Research. (1-8 cr [max 12 cr]. §3890H. Prereq—Hons) Topics vary. Topics that students would like faculty to develop into a course or topics closely related to faculty research/scholarship or contemporary issues.

WOST 3893H. Honors Directed Study. (1-8 cr [max 12 cr]) Honors directed study.


WOST 4102. Women, Gender, and Science. (3 cr. Prereq—1001 or 1002 or 3001 or 3002 or #) Three intersecting themes analyzed from 1700s to the present: women in science, sexual and gendered concepts in modern sciences, and impact of science on conceptions of sexuality and gender in society.
WoSt 4103. Honors: International Feminist Theory. (3 cr. Prereq—[3102, 8 cr WoSt] or grad or #)
Western/nonwestern feminist theories in conversation. Historical, cultural, and political context. Relation of theory to activism.

WoSt 4103H. Honors: International Feminist Theories. (3 cr. Prereq—[3102, 8 cr WoSt] or grad or #)
Western/nonwestern feminist theories in conversation. Historical, cultural, and political context. Relation of theory to activism.

WoSt 4108W. Senior Seminar: Writing. (2 cr. Prereq—4107, WoSt sr, 4993 for 1 cr)
Writing seminar for the senior project. The writing process is studied and the project is completed under the supervision of the instructor and the faculty adviser.

WoSt 4109. Field Learning. (2 cr. Prereq—4107, 4993 for 1 cr)
For majors working on senior projects that involve an internship or learning practicum. Majors may substitute this course for WoSt 4108 (with simultaneous enrollment in WoSt 4993) to finish their senior project.

WoSt 4190. Topics: Methods of Inquiry. (3 cr. Prereq—Sr or grad or #)
Topics specified in Class Schedule.

WoSt 4201. The Rebel Woman: A Feminist Perspective. (3 cr. Prereq—12 cr in WoSt or substantial work in psych or soc sci)
Myths and realities surrounding conceptualizations of women in public, private, personal, social, sexual, professional, and community interactions.

WoSt 4290. Topics: Biology, Psychology, and Social Perspectives. (3 cr. Prereq—Sr or grad or #)
Topics specified in Class Schedule.

WoSt 4301W. Women Writers of Africa and Latin America. (3 cr. Prereq—8 cr in WoSt or Latin American or African studies or #)
Contemporary women writers from Sub-Saharan Africa and Latin America, including the Spanish-speaking Caribbean. Fiction, poems, plays, and essays in light of gender relations, feminist theory, and the history of colonialism.

WoSt 4302H. Honors: Women's Personal Narratives. (3 cr. Prereq—3301 or 3032 or 3 cr literary studies or 3 cr AfroAm or #)
Literary autobiography, journals, travel narratives, essays, slave narratives, and ethnographies used to consider content of and methodological, theoretical, and aesthetic issues in constructing/producing women’s experience.

WoSt 4390. Topics: Literature, Film, and the Arts. (3 cr. Prereq—Sr or grad or #)
Topics specified in Class Schedule.

WoSt 4401. Chicana/Latina Cultural Studies. (3 cr. Prereq—3002 or 3410 or 3411 or 3 cr Chicano studies or #)
Diversity of cultures called “Hispanic”; women in these cultures. Chicanas/Latinas living in United States or migrating from their home nations to United States.

WoSt 4402. Rebels, Radicals, and Revolutionaries: History of Western Feminisms. (3 cr)
Survey of main currents in history of western feminist thought, politics, and social movements from 1770s to present.

WoSt 4403. Queering Theory. (3 cr. Prereq—3001)
Lesbianism and lesbian identities as products of cultural practices, relations, and meanings that are historically specific/changing.

WoSt 4490. Topics: Comparative and Global Studies. (3 cr. Prereq—Sr or grad or #)
Topics specified in Class Schedule.

WoSt 4502. Women and Public Policy. (3 cr. Prereq—[3102 or Sr or grad or 9 cr [WoSt or pol sci or sociology] or #]
Public policy issues, processes, and histories as these affect women-, children-, and gender-related issues.

WoSt 4504. Women and the Legislative Process. (3 cr. Prereq—[3102 or Sr or grad student or #]
Current roles, impacts, and interactions of women as legislators, constituents, and professional or citizen lobbyists in state/national legislatures. Unique contributions, issues, challenges of women. Ways in which gender is operative in legislative process.

WoSt 4505. Honors: Legislative Internship. (3 cr. Prereq—4504 or equiv or grad, A)
Discussion group and learning community for students working as interns for a Minnesota legislator during the year’s legislative session.

WoSt 4590. Topics: Civic and Community Studies. (3 cr. Prereq—[Sr or grad or #)
Topics specified in Class Schedule.

WoSt 4900W. Women's Studies Seminar. (3 cr. max 12cr; A-F only. Prereq—WoSt major, junior or senior standing, or #)
Includes a component on research methods/writing. Capstone experience. Culminates in a 20-25 page paper.

WoSt 4980. Directed Instruction. (1-8 cr [max 12 cr])
WoSt 4993. Directed Study. (1-8 cr [max 12 cr])
WoSt 4994. Directed Research. (1-8 cr [max 12 cr])
WoSt 5101. Feminist Approaches to Ethnography. (3 cr)
Preparation for feminist ethnographic research in the social sciences. Using recent works by feminist ethnographers, focus is on the methods, politics, and ethics, as well as gender, race, class, and cross-cultural issues pertaining to fieldwork.

WoSt 5102. Feminist Approaches to History. (3 cr. Prereq—WoSt or grad or #)
Analysis and practice of feminist history. Theories, methods, and sources that address the interrelationship of gender, race, class, and sexuality.

WoSt 5103. Feminist Pedagogies. (3 cr. Prereq—Grad or #)
Theory and practice of feminist pedagogies by comparing and evaluating various multicultural feminist theories of education/teaching and the application of specific theories, techniques, and teaching strategies.

WoSt 5105W. Gendered Rhetoric of Science and Technology. (3 cr. Prereq—8 cr WoSt or grad or #)
How cultural gender roles are affected by science and technology as well as influence scientific and technological thinking and communication strategies.

WoSt 5106. The Cultural Construction of Sex, Gender, and Sexuality. (3 cr. Prereq—Feminist studies grad or 12 cr WoSt or #)
Investigation of Euro-American concepts of sex, gender, sexuality in representative texts and images from the 17th century to the present. Critical and source materials from literary and cultural studies, history, biology, anthropology, psychology, and sociology.

WoSt 5107. Gender, Culture, and Science. (3 cr. Prereq—[3102 or Sr or grad or #)
Critical study of some of the major papers on the representation of madness and how it intersects with gender as well as class, race, sexual orientation, and nationality.

WoSt 5200. Feminist Therapies. (3 cr)
Feminist and multicultural perspectives regarding therapy and other helping forms for women, including philosophy of feminist therapy; feminist ethics in therapy; gender, sexual identity, race and class in therapy, and related topics.

WoSt 5201. Global Processes and the Politics of Sexuality. (3 cr. Prereq—12 cr WoSt or feminist studies grad student or #)
Comparative examination of the social construction of sexuality. Formal/informal norms/regulations, categories of deviance, representation of sex in the media/arts, role of sexuality in relation to agency/subjectivity.

WoSt 5202. Feminist Science. (3 cr)
Feminist and multicultural perspectives regarding science and technology and other helping forms for women, including philosophy of feminist science; feminist ethics in science; gender, sexual identity, race and class in science, and related topics.

WoSt 5300. Communication and Gender. (3 cr.
For majors working on senior projects that involve an internship or learning practicum. Majors may substitute this course for WoSt 4108 (with simultaneous enrollment in WoSt 4993) to finish their senior project.

WoSt 5403. Chicana/Latina Feminisms. (3 cr. Prereq—8 cr WoSt and/or Chic or grad or #)
The historical and social development of Chicana and Latina feminisms in general and their various specific types.

WoSt 5404. Working Class Women's Cultures. (3 cr. Prereq—12 cr WoSt or #)
Myths and realities surrounding working class women and their cultures. Use sociological and literary material in an effort to learn about working class women and to hear their own voices.

WoSt 5405. Chicana: Women and Work. (3 cr. Prereq—#)
Chicanas, their various relationships to family/community. Local, national, and global work forces. Questions/issues related to growing integration of world’s systems of production.

WoSt 5490. Topics: Comparative and Global Studies. (3 cr max 12 cr)
Topics specified in Class Schedule.

WoSt 5501. Women and the Law. (3 cr. Prereq—9 cr [WoSt or pre-law grad] or #)
Legal system as it relates to women: historical legal approaches to issues related to constitutional rights of women.

WoSt 5505. Women and Indigenous Land Struggles. (3 cr. Prereq—8 cr WoSt and/or Chic and/or AmIn or #)
Representative land struggles by indigenous women from a critical race and gender perspective.

WoSt 5590. Topics: Civic and Community Studies. (3 cr; max 12 cr)
Topics specified in Class Schedule.

WoSt 5993. Directed Study. (1-12 cr [max 12 cr]. Prereq—#)
WoSt 5994. Directed Instruction. (1-12 cr [max 36 cr])
WoSt 5995. Directed Research. (1-8 cr [max 36 cr])

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Course Descriptions

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WPS 1001. Wood and Paper Science Professions Orientation. (1 cr.N-S only)
How industry converts forest resources into products while protecting source of raw material.

WPS 1002. Application of Computer and Sensor Technology to Problems in Wood and Paper Science. (1 cr [max 2 cr]; S-N only)
How sensor/computer technologies are used to monitor/evaluate environmental conditions. Applications of common computer packages to problem solving. Wood processing, spreadsheet, presentation/database applications are used for course exercises in building science or wood products marketing/manufacturing. Sensor technology: application in process control and in collection/analysis of data from field or laboratory sensors.

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Wood and Paper Science (WPS)

Department of Wood and Paper Science

College of Natural Resources
WPS 1301. Wood as a Raw Material. (3 cr; A-F only) Physical/chemical nature of wood and wood fiber. Raw material sourcing, manufacturing processes, product characteristics for principal forest products. World wood supply, consumption trends.

WPS 1302. Wood as a Raw Material. (3 cr; Prereq--R; cr not granted to CNR majors; distance learning) Physical/chemical nature of wood and wood fiber. Raw material sourcing, manufacturing processes, product characteristics for principal forest products. World wood supply, consumption trends.


WPS 3393. Directed Study. (1-3 cr; max 3 cr; Prereq--#) Opportunities to pursue projects not available through independent study or extra credit. In consultation with an adviser, students develop a prospectus and complete progress reports and a final report on the project. WPS 3396. Industrial Internship (Industrial Assignment). (1 cr; A-F only. Prereq--WPS cooperative ed student) Industrial work assignment in forest products cooperative education program. Evaluation based on formal report written by student at end of each semester of work assignment.

WPS 4200H. Honors Seminar. (1 cr; A-F only. Prereq--WPS upper div honors, #) Current topics presented by faculty/students. Lecture/discussion.

WPS 4201. Wood Industry Tours. (1 cr. Prereq--1301, 1303, or #) Five-day tour consisting of visits to at least 12 manufacturers representing broad cross section of wood-using industry.


WPS 4302. Wood Chemistry. (3 cr; A-F only. Prereq--2xxx organic chem course) Occurrence, biosynthesis, structure, and chemistry of chief biopolymers. Related lower molecular weight components in woody tissues. Chemical/biochemical principles of pulping wood and bleeding pulp.

WPS 4303. Wood Deterioration and Preservation. (3 cr. Prereq--1301 or #) Deterioration of wood and wood products by bacteria, fungi, insects, marine organisms, fire, and weathering. Methods of preservation, preservatives used. Lecture, lab.


WPS 4309. Wood-Fluid Relationships. (2 cr. Prereq--1301 or #) Moisture in wood, its relationship to density and specific gravity, shrinking/swelling, electrical properties, strength properties, thermococonductivity, absorption isotherms, dimensional stabilization, permeability, and diffusion.


WPS 4318. Pulp and Paper Process Simulation and Control. (3 cr. Prereq--4305, ChEn 4001, Math 2263, ME 3321, ME 3322, [paper sci/engineering sr or grad student]) Concepts, methodology, and tools in process simulation, process dynamics, and automatic process control.


WPS 4322. Biological and Environmental Science of Paper. (2 cr. Prereq--[Jr or sr in PS&E program or grad student or #]) Biological process technology as applied to raw materials, manufacture processes, and product performance in paper industry. Roles/uses of microorganisms/enzymes in pulp/paper improvements/problems. Environmental impacts related to air/water discharge from papermaking as reflected in major portions of a recent paper mill expansion.


WPS 4334W. Advanced Residential Building Science. (3 cr. Prereq--[4301, 4303, 4333]) Building science theory, advanced applications for residential buildings. Focuses on heat/mass transfer.


WPS 4335. Mechanics and Structural Design With Wood Products. (3 cr. Prereq--4301 or CE student) Nature of mechanical properties of wood, design, and analysis of wood members/structures.


WPS 4362W. Pulping and Bleaching. (3 cr. Prereq--4302, 4305, paper sci/engineering [jr or sr or grad student]) Chemistry/technologies in producing paper-making raw materials. Focuses on wood pulp/bleaching, including non-wood fibers and recycled fiber materials.


WPS 4401W. Forest Products Marketing. (4 cr; A-F only. Prereq--1301) Marketing/selling forest products. Focuses on companies that distribute wood-based construction materials. Lecture, discussion, in-class role playing, case studies, guest presenters, field trips to local companies.

WPS 4405. Paper in Today's World. (2 cr. Prereq--4305, non-WPS major) Students prepare teaching unit on pulp/paper for use in elementary school, junior high, or senior high school science class.

WPS 4406. Understanding Wood. (1 cr) For woodworking professionals and serious craftspersons. Cellular structure of wood, identification of hardwoods and softwoods, interaction of water and wood. No prior technical training in wood properties is needed, although general experience with woodworking is helpful.

WPS 4411. Application and Performance of Wood-based Composites in Services. (2 cr; A-F only. Prereq--1301 or 4406 or #; intended for [forest products marketing/manufacturing professionals, architects, commercial/residential designers]) Physical/mechanical properties of composites. Composite applications/installations.

WPS 4491. Senior Topics (Independent Study). (1-4 cr. Prereq--CNR sr, #) Independent study in student’s area of interest.


WPS 5402. Business Markets in the Forest Products Industry. (3 cr [max 3 cr; A-F only]) How forest products companies sell to other businesses, how this differs from traditional consumer process. Emphasizes business marketing
Work, Community, and Family Education (WCFE)

Department of Work, Community, and Family Education

College of Education and Human Development

WCFE 1301. Introduction to Career and Technical Education Teaching. (2 cr; A-F only.)
Prereq—Occupationally certifiable individual
Entry-level skills to function as a teacher. Philosophy of career/technical education, planning of instruction, instructional methods, student evaluation, working with students who have special needs, ancillary duties of career/technical education faculty. Emphasizes microteaching and feedback.
WCFE 3011W. Introduction to Technology and Public Ethics. (3 cr)
WCFE 5011W. Technology and Public Ethics. (3 cr; A-F only)
WCFE 5021. Learning Through Service. (3 cr)
Service as both a philosophy and method of learning. Content covers service learning and the practice of service in school-based and community-based organizations.
WCFE 5031. Information Resources in Education. (3 cr; S-N only)
Sources of knowledge and search strategies for accessing library, electronic, institutional, and informal resources of interest to educators.
WCFE 5101. Introduction to Leadership and Administration of WCFE. (3 cr)
Basic concepts of finance, public relations, communications, legal aspects, leadership, personnel policies and management, program planning and development, evaluation, and interinstitutional collaboration of work, community, and family education programs in school-based settings.
WCFE 5102. Leadership in WCFE. (2 cr)
An introduction to concepts of leadership, leadership roles and responsibilities, and application to work, community, and family education settings.
WCFE 5121. Principles of Supervisory Management. (3 cr)
Introduction to the principles of supervision in education, business/industry, government, and service organizations.
WCFE 5125. Critical Pedagogy. (3 cr; S-N only)
Examination of critical pedagogy; critique of power relations regarding race, culture, class, gender, and age in various educational settings; consideration of improved practice in education for children, youth, and adults.
WCFE 5131. Planning WCFE. (3 cr)
Examination of educational planning and evaluation of work, community, and family education in formal and nonformal settings.
WCFE 5141. Evaluation of WCFE. (3 cr)
Designing and conducting project, program, and systems evaluations in work, community, and family education contexts and settings.
WCFE 5201. Family and Work Relationships. (3 cr; A-F only)
Examination of the interactions of work and family to prepare professionals to improve work and family relationships.
WCFE 5301. Philosophy and Practice of Career and Technical Education: Advanced. (2 cr; A-F only)
WCFE 5302. Corporate Development for Business and Industry. (2 cr; A-F only)
Designing instructional programs/courses focused on helping learners develop desired competencies. Designing instruction for performance-based training and vocational/technical education. Developing course syllabus components that clarify broad course expectations. Developing academic/community-based elements that complement course goals.
WCFE 5361. Instructional Methods for Business and Industry. (2 cr; A-F only)
Theory/practice in instructional methods/techniques for career/technical education (CTE) instructors and for human resources and development (HRD) professionals. How to deliver instruction using various teaching methodologies, select appropriate methodologies, and plan for their delivery.
WCFE 5390. Special Topics for Undergraduates in WCFE. (1-4 cr [max 12 cr])
Course content varies by offering.
WCFE 4990. Special Topics: Professional Issues in WCFE. (1-4 cr [max 12 cr])
Course content varies by offering.
WCFE 5002. Thinking, Learning, and Teaching in Work, Community, and Family. (3 cr; A-F only)
Nature of thinking/learning in everyday life contexts of family, work, community. Theory/practice relevant to stimulating/supporting thinking/learning in these contexts.
WCFE 5341. Global Program Delivery Techniques and Technology. (2 cr; A-F only)
Special educational activities and teaching and communications methods and techniques for youth and adults, ranging from outreach to extension services, with an emphasis on youth and adult education programs in different global settings.
WCFE 5351. Methods for Change in Developing Countries. (3 cr; A-F only)
Sociological and cultural parameters as they pertain to the promotion of improved practices in rural, community, and agricultural development, including formal and informal education institutions. Project planning, implementation, and evaluation related to actual change and development situations in developing countries.
WCFE 5400. Special Topics in Youth Development Leadership. (1-4 cr [max 4 cr])
An examination of important social and political topics of current interest to youth development practitioners with an emphasis on leadership implications for practice in youth agencies, congregations, schools, and other community settings. Content varies by offering.
WCFE 5411. The Everyday Lives of Youth. (3 cr; A-F only)
Lived realities of body, time, space, other, and self from an existential and phenomenological perspective.
WCFE 5412. Experiential Learning: Theory and Practice. (3 cr; A-F only)
Examines the theory and practices of learning by doing. Emphasis on the educator’s personal engagement in the actual process to understand the technical, motivational, and evaluative aspects of experiential learning.
WCFE 5413. Organizational Approaches to Youth Development. (3 cr; A-F only)
Language, historical influences, and educational philosophies fundamental to youth development work in organizations serving youth.
WCFE 5414. Issues in Youth Development Leadership. (3 cr; A-F only)
An examination of issues that drive the professional practice of community-based youth work. Participants engage experts from the family, community, schools, and workplace to develop a deeper understanding of how public issues and policy affect the everyday lives of youth.
WCFE 5451. Seminar: Youth Development Leadership. (1-4 cr [max 4 cr]; S-N only.
Prereq—Youth Development Leadership student or #)
Applies principles of healthy youth development, nonformal learning venues, and experiential education to practice/policies of community-based youth work. Individual/group projects focus on applied research, community-based teaching/learning, and foundations of ethical practice. Four-course sequence.
WCFE 5496. Leadership Field Experience: Youth Development. (4 cr; S-N only)
Leadership in support of healthy youth development. Work in agency dedicated to community-based youth programming, education, public policy; advocacy for children, youth, families.
WCFE 5511. Education for Work. (3 cr)
Examination of contextual bases underlying education for work; implications for practice.
WCFE 5521. School-to-Work Policies. (3 cr)
Examination of the aims and purposes, federal and state policies, educational reform, and issues and concepts relating to school-to-work education.
WCFE 5522. School-to-Work Practices. (3 cr)
Examination of learning in context; curricular integration; educational system articulation; educational partnerships; best practices in school-based, work-based, service-based learning, and connecting activities; building community support; and leadership relating to school-to-work education.
WCFE 5601. Student and Trainee Assessment: Advanced. (2 cr; A-F only)
Developing learning progress reporting systems and tests of knowledge, affect, and processes for programs focused on instruction of skills associated with business/industry. Evaluating instructional effectiveness. Applying tests and other evaluation instruments to assess/report learning in business/industry and career/technical education fields. Students develop each type of test and an overall evaluation plan for a course.
Strategies for conducting three types of research that
Developmental Education.
WCFE 5804. Research in Postsecondary
discourse,” error/grammar in student writing, best
Basic grounding in theory/practice of college-level
Prereq–Bachelor’s degree)
Student: Theory and Practice.
Interagency planning issues and practices relating to
conditions in work, community, and family settings.
Identifying and accommodating educational traits of
Community, and Family Settings.
WCFE 5821. Diversity Issues and Practices in Work,
Community, and Family Settings. (3 cr)
Examination of the nature of diverse populations and
their unique learning and training needs, exemplary
programs, and collaborative efforts among persons
representing work, community, and family settings.
WCFE 5822. Diversity and Organizational
Transformation in Work, Community, and Family Education. (2 cr)
Developing models for understanding the impact of
diversity on individual, organizational, and
community outcomes; discussing organizational
capital related to diversity.
WCFE 5823. Program Planning and Improvement
for Special Populations in Work, Community, and Family Education. (2 cr)
Concepts, issues, and practices related to the design,
implementation, and evaluation of efforts focused on
developing new programs or modifying existing
programs for individuals with special learning needs
in work, community, and family settings.
WCFE 5901. Using Research in Work, Community,
and Family Education. (3 cr)
Introduction to the role of work, community, and
family education research in professional practice;
significant problems of practice for research,
alternative modes of research, and synthesis and
application of the results of research.
WCFE 5990. Special Topics in Work, Community,
and Family Education. (1-4 cr [max 4 cr])
Topics vary.
WCFE 5993. Directed Study in WCFE. (1-4 cr [max 4 cr]; Prereq–A)
Self-directed study, with faculty advice, in areas not
covered by regular courses.
Youth Development and Research (YoSt)
School of Social Work
College of Human Ecology
YoSt 2001. Introduction to Youth Studies. (2 cr)
Introduction to the issues of youth and adolescents in
their everyday lives. Policies, programs, and services
for youth and adolescents.
YoSt 2002. Introduction to Youth Studies:
Understanding Young, Young People, Youthhood, and
Youth Work. (4 cr)
Introduces youth studies minor. Prepares students for
more in-depth departmental offerings and for continued
scholarship or later work with youth, directly or on their behalf.
YoSt 3001. Introduction to Youth, Youth
Development, and Youth Work. (3 cr; A-F only)
Prereq–Soc 1001, Psy 1001, 2001
Framework, conceptual language for understanding
youth, youth development, youth work. Formal/off-
formal settings, types of work with youth that
constitute youth work as a practice.
YoSt 3002. Observation Lab: Youth, Youth
Development, and Youth Work. (1 cr; A-F only)
Prereq–Soc 1001, Psy 1001, 2001
Field observation of young people. Field visits to
youth programs.
YoSt 3003. Bridging Theories, Research, Practices,
and Observations about Youth Development and
Youth Work. (1 cr; A-F only; Prereq–Psy 1001, Soc 1001,
2001, $1001, $1002)
Reflective seminar to carry out, at beginning level,
guided reflection of one’s/other’s ideas, experiences,
feelings about courses, self, youth work.
YoSt 3004. Youth in Community Context: Home,
School, Neighborhood, Geography, Programs,
Policy. (2 cr; A-F only; Prereq–3001, $3005, $3006)
Introduces community, sociocultural context of
“growing up,” “coming of age” as primary site for
healthy youth development. Community introduced
also as home to youth agencies/programs along
intervention continuum. How community-based
and cultural identity, social expectations of young people
frame young people’s roles in school, work,
neighborhoods
YoSt 3006. Fieldwork Seminar: Youth, Youthworker,
Context, Programs, Organizations, Place. (1 cr;
A-F only; Prereq–3001, $3004, $3005)
Beginning youth work, youth agency, program,
organization, service as found in students’ youth
work field experience.
YoSt 3007. Integrative Seminar: Analysis,
Experience, Reflection on Youth Studies and Youth
Work. (2 cr; A-F only; Prereq–3001, 3006)
Students integrate their two years of observation,
analyses, experiences, and reflections about youth,
work, youth work, youth programs. Work/career paths for
beginning/advanced youth workers.
YoSt 3101. Introduction to Youth Work. (2 cr.
Prereq–1 gen psy and 1 gen soc course)
Explore settings in which youth work is done:
schools, informal education, juvenile justice, mental
and physical health organizations, religious
organizations. Key issues, policy and programmatic
responses; philosophy, values, roles, tasks of
youthworkers, and career patterns.
YoSt 4002. Constructing Personal Models of Youth
Scholarship and Youth Work. (4 cr; Prereq–2002)
Integrates/ends University-wide undergraduate youth
students minor. Students analyze/reflect on youth
students minor course content, especially those
models, theories, and concepts presented in 2002.
Youth, young people, youthhood, youth work.
Models, personal responds to youth. Occupational/
voluntary callings. Class discussion, written
assignments.
YoSt 5031. Youth in the World. (3 cr.
Prereq–Upper div AdPcy course)
Encourages critical thinking about how youth as
ideal and as lived reality are understood in
scholarship, public discourse, and professional
practice. Larger framework includes building a
basis for understanding youth and working with or
on behalf of youth.
YoSt 5032. Child and Adolescent Psychology for
Practitioners. (3 cr.
Prereq–courses in ed psy or child
adolescent psych)
Application of theory and research about children
and adolescents including how findings can be used
and how theories facilitate understanding of
behavior.
YoSt 5101. Youth Work Practice I: Internship. (3 cr.
Prereq–3101, 3032 or equiv, $5111, #)
First course of a sequential internship that includes
15 hours per week working with youth in a
community youth-serving organization. Develop and
enhance competence and identity as a youth worker,
and reflect on and integrate knowledge about youth
with ongoing experience in youth work.
YoSt 5102. Youth Work Practice II: Internship. (3 cr.
Prereq–5101, $5112, #)
Second course of a sequential internship that includes
15 hours per week of work with youth in a
community youth-serving organization. Develop and
enhance competence and identity as a youth worker,
and reflect on and integrate knowledge about youth
with ongoing experience in youth work.
YoSt 5111. Youth Work Methods I: Seminar. (1 cr.
Prereq–3101, 3032 or equiv, $5101, #)
Weekly discussion seminar taken concurrently with
5101 to integrate theory and praxis with youth work
experience. Written and experiential assignments to
increase knowledge, competency, and skills related
to working with youth.
YoSt 5112. Youth Work Methods II: Seminar. (1 cr. Prereq–5111, ¶5102, #)
Weekly discussion seminar taken concurrently with 5102 to integrate theory and praxis with youth work experience. Written and experiential assignments to increase knowledge, competency, and skills related to working with youth.

YoSt 5234. Youth Agencies, Organizations, and Youth Service System. (2 cr. Prereq–Two soc/anth courses, work exper in a youth agency or org)
Overview of major forms of youth agencies and organizations, sources of agency legitimacy, ideologies and values, and goals. Relations between and among agencies and organizations. Roles of adults and youth; professionals and nonprofessionals; paid staff and volunteers; youth participation; legal and ethical issues. Examples of existing and ideal agencies.

YoSt 5235. Community Building for Healthy Youth Development. (2 cr. Prereq–Two social sci courses, exper working with youth or #)
Community is a major context of adolescence and youth life, and community-building is a major strategy for healthy development. Explore recent foundation and government reports that address issues and practical problems of community-building.

YoSt 5240. Special Topics in Youth Studies. (2-8 cr [max 10 cr]. Prereq–Two social sci courses, exper working with youth or #)
In-depth investigation of one area of youth studies. Teaching procedure and approach determined by specific topic and student needs. Topic announced in advance.

YoSt 5241. Experiential Learning. (2 cr. Prereq–Two social sci courses, exper working with youth or #)
Cover rationale for and purposes of experiential learning in schools and youth-serving agencies, development and implementation of experiential programs for adolescents, and evaluation of experiential-learning programs. Each student will develop a plan for an experiential program for teenagers.

YoSt 5291. Independent Study in Youth Studies. (1-8 cr [max 8 cr]. Prereq–#)
Independent reading and/or research under faculty supervision.

YoSt 5301. Communicating with Adolescents About Sexuality. (2 cr. Prereq–Upper div AdPy course, exper working with youth or #)
Sexual development and experiences emphasizing how adults can be comfortable in communicating more effectively with young people. Sexual patterns, variations, roles, power, exploration, and sex education.

YoSt 5313. Direct Work with Adolescents. (2 cr. Prereq–Two social sci courses, exper working with youth or #)
Designed to give an understanding of direct work with troubled and at-risk adolescents in a wide range of settings where youth workers or social workers are typically involved. Emphasis on young people in groups in the “lifespace” in everyday life, rather than in one-to-one office-based interactions.

YoSt 5321. Work with Youth—Individual. (2 cr. Prereq–5032 or equiv or #)
Examination of basic assumptions underlying individual work with youth. Attention to special issues and concerns of adolescents and of persons who work with them, especially those who work with youth in one-to-one interactions.

YoSt 5322. Work with Youth—Families. (2 cr. Prereq–5321 or upper div AdPy course, family theory course or #)
Theories and techniques of working with youth and their families. Emphasis on practical methods of structural change, developing effective communication, decision-making and problem-solving systems, winning the family’s cooperation; the role of the professional to influence healthy family development.

YoSt 5323. Work with Youth—Groups. (2 cr. Prereq–5321 or upper div AdPy course or #)
Increase knowledge and understanding of adolescent group needs and associations; increase knowledge of group process; and enhance skill in working with groups of adolescents in the community, in group living situations, and in group therapy.

YoSt 5402. Youth Policy: Enhancing Healthy Development in Everyday Life. (3 cr. Prereq–Two social sci courses, exper working with youth or #)
Youth policy is typically grounded to problems and risks and is specific to human services domains such as education, health, juvenile justice, employment, and the like. Create youth policy directed at enhancing healthy development through community building, program development, and other strategies.

For definitions of course numbers, symbols, and abbreviations, see page 296.