ARTS 002B: Introduction to Choral Music [2]
This is a course in which students are introduced to the technique of chorale singing.
Letter grade only. May be repeated for credit twice.

ARTS 030: Introduction to Vocal Traditions [2]
This course will introduce students to the vocal repertoire of traditional folk cultures.
Major requires letter grade only. May be repeated for credit four times.

ARTS 060: Introduction to World Music Ensemble - Africa [2]
This course will introduce students to the repertoire and performance practices of an African musical tradition.
Prerequisite: Enrollment in the course is dependent on audition. May be repeated for credit twice.

ARTS 061: Introduction to World Music Ensemble - Asia [2]
This course will introduce students to the repertoire and performance practices of an Asian music tradition.
Prerequisite: Enrollment in the course is dependent on audition. May be repeated for credit twice.

ARTS 062: Introduction to World Music Ensemble - The Pacific [2]
This course will introduce students to the repertoire and performance practices of a Pacific Islander music tradition.
Prerequisite: Enrollment in the course is dependent on audition. May be repeated for credit twice.

ARTS 063: Introduction to World Music Ensemble - The Americas [2]
This course will introduce students to the repertoire and performance practices of a traditional music culture from the North or South American continents or the Caribbean.
Prerequisite: Enrollment in the course is dependent on audition. May be repeated for credit twice.

ARTS 100: History of World Art [4]
This is a survey course of world art with an emphasis on the cultural meaning of forms and the influence of arts on society. The course examines visual arts from around the world in a variety of forms and in their historical, cultural, and sociopolitical contexts.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or WRI 010 or consent of instructor. Letter grade only.

ARTS 130: History of World Architecture [4]
This course introduces students to significant examples of world architecture and investigates the ways in which architecture serves as an integral part of cultural, socioeconomic, and political development in cultures around the world.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or GASP 101 or consent of instructor. Letter grade only.

ARTS 131: Advanced Vocal Traditions [2]
This course is for advanced vocal students of a traditional folk culture.
Prerequisite: ARTS 030 with a grade of B- or better or consent of instructor. Enrollment in the course is dependent on audition. May be repeated for credit twice.

ARTS 142: Postmodern Art [4]
This course focuses on the history of twentieth-century visual arts after WWII and the emergence of postmodernism in a global context. It examines artwork and critical theories in relation to historical, cultural and sociopolitical developments in various cultures throughout the world.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or GASP 101 or consent of instructor. Letter grade only.

ARTS 160: Advanced World Music Ensemble - Africa [2]
This course is designed for advanced students of an African musical tradition.
Prerequisite: ARTS 060, with a grade of B- or better or consent of instructor. Enrollment in the course is dependent on audition . May be repeated for credit four times.

ARTS 161: Advanced World Music Ensemble - Asia [2]
This course is for advanced students of an Asian music tradition.
Prerequisite: ARTS 061, with a grade of B- or better or consent of instructor. Enrollment in the course is dependent on audition . May be repeated for credit four times.

ARTS 162: Advanced World Music Ensemble - The Pacific [2]
This course is for advanced students of a Pacific Island music tradition.
Prerequisite: ARTS 062, with a grade of B- or better or consent of instructor. Enrollment in the course is dependent on audition . May be repeated for credit twice.

ARTS 163: Advanced World Music Ensemble - The Americas [2]
This course is for advanced students of a North or South American or Caribbean music tradition.
Prerequisite: ARTS 063, with a grade of B- or better or consent of instructor. Enrollment in the course is dependent on audition . May be repeated for credit twice.

BEST 211: Synthetic Biology [4]
The field of synthetic biology is quickly emerging as potentially one of the most important and profound ways by which we can understand and manipulate our physical world for desired purposes. While synthetic biology builds upon existing areas, such as genetic engineering, systems biology, and non-biological fields such as computer science, it is becoming evident that synthetic biology represents its own new engineering discipline. At the heart of synthetic biology is the aim to make the engineering of new biological functions predictable, safe, and quick and to aid in creating biological applications of benefit to society. Relevant topics in cellular and molecular biology and biophysics, dynamical and engineering systems, and design and operation of natural and synthetic circuits are covered in a concise manner that than allows the students to begin to design new biology-based systems.
Prerequisite: Graduate standing in Engineering or Natural Sciences. Letter grade only.

BIO 005: Concepts and Issues in Biology Today [4]
Fundamental biological concepts in the areas of genetics, evolution and ecology are explored in the context of current issues enabling students to understand the relevance of biology to their lives both as individuals and as voting citizens.
Prerequisite: Course cannot be taken after successfully completing BIO 001 or BIO 002. Not recommended for BIO majors.

BIO 110: The Cell [4]
Introduction to the structure and function of bacterial, plant and animal cells, with an emphasis on universal cellular systems, including regulation of sub-cellular
organization, control of cellular processes by internal and external signaling, energy capture, storage and usage, and cell cycle.
Prerequisite: (BIO 100 or BIO 101 May be Taken Concurrently or BIS 100 or BIS 101 or BIO 002) and CHEM 008. Major requires letter grade only.

BIOE 104: Biotransport [4]
Biological Transport Phenomena is the quantitative description of momentum
transport (viscous flow) and mass transport (convection and diffusion) in living systems. We explore the similarities between the fundamental principles of momentum, heat, and mass transfer, and combine fundamentals with conservation laws to develop mathematical descriptions of physiological and engineering systems.
Prerequisite: (ICP 001A or MATH 021) and (ICP 001B or PHYS 018 or PHYS 008) and (BIO 100 or BIS 100 or BIO 002 or BIS 002) and CHEM 002. Letter grade only.

BIOE 150: Bioengineering Design [3]
Students work in teams on bioengineering problems requiring design solutions. Students define the problem, propose a viable solution, acquire approval for the design, and build and test the designed device.
Prerequisite: MATH 021 and ENGR 045 and BIO 002 and CHEM 008 and ENGR 130 and ENGR 065 and ENGR 166 and (BIOE 100 or BIO 161) and (PHYS 008 or PHYS 018) and (ENGR 120 or BIOE 104). Letter grade only.

CHEM 010: General Chemistry II [4]
Second semester of a two-semester general chemistry sequence. Chemical kinetics, acid-base, ionic, and gaseous equilibria, chemical thermodynamics, electrochemistry, main-group and transition-metal chemistry, nuclear chemistry. The concepts and quantitative skills introduced in lecture are reinforced by a laboratory section.
Prerequisite: CHEM 002 and (MATH 011 May be Taken Concurrently or MATH 021 May be Taken Concurrently). Major reqs letter grade only.

CHEM 101L: Advanced Synthetic Laboratory [2]
Laboratory experiments in synthetic methods and chemical and spectroscopic characterization of organic and inorganic compounds. Emphasis is on microscale techniques.
Prerequisite: CHEM 100 May be Taken Concurrently. Letter grade only. Chemical Sciences majors only.

CHEM 113: Chemical Thermodynamics and Kinetics [3]
Statistical mechanics, thermodynamics, and chemical kinetics, taught from a perspective that develops the behavior of bulk matter from molecular properties.
Prerequisite: CHEM 010 and PHYS 009 and MATH 024 and MATH 032 May be Taken Concurrently. CHEM 112 is recommended but not required. Letter grade only.

COGS 101: Mind, Brain, and Computation [4]
Further explores the issues covered in COGS 1, but with greater emphasis on computation, brain structure, neurological deficits, and the connection between mind and brain.
Prerequisite: COGS 001 or PSY 001

COGS 140: Perception and Action [4]
This course surveys key theories and experimental procedures for studying perception and action. Topics include psychophysics; perception of color, space, shape and motion; pattern recognition; perceptual attention; principles of human action and motor control; perception-action coupling; applied domains of perception and action including sports and robotics.
Letter grade only.

COGS 141: Vision [4]
This course provides a survey of vision from interdisciplinary perspectives. Topics include: neurophysiological structure and function; psychophysical methods; color, motion, and form perception; spatial perception and attention; evolutionary perspectives; philosophy of visual consciousness; models of vision; applied technologies; the role of vision in art, film, and other expression.
Prerequisite: COGS 001 or consent of instructor.

COGS 152: Services Science and Management [4]
Services e.g., restaurants, hotels, lawyers, information technology operations, business consulting -- account for more than 80% of jobs in the US. Through case studies of businesses and scientific studies of people in real service settings, this course focuses on how to align people and technology effectively to generate value.
Prerequisite: Junior or Senior or consent of instructor. Letter grade only.

COGS 173: Advanced Judgment and Decision Making [4]
Advanced study of recent research on judgment and decision making, such as behavioral economics, rationality and intelligence, health and medical decision making, decision neuroscience.
Prerequisite: COGS 153 or MGMT 153 or ECON 153 or POLI 153

CSE 126: Information Systems and Service Design [4]
This course presents an end-to-end view of the design life cycle for information systems and services. It explains how design problems are conceived, researched, analyzed and resolved in different types of organizations and contexts, including start-ups, enterprises with legacy-systems, non-profit and government entities.
Prerequisite: Letter grade only. Senior standing. Management and Computer Science & Engineering majors only.

CSE 177: Database Systems Implementation [4]
This course studies the internals of a database management system, with emphasis on query execution. The final goal of the class is to build a fully-functional database execution engine consisting of all the standard components: storage manager, buffer manager, query execution engine, query optimizer, and query compiler.
Prerequisite: CSE 031. Letter grade only.

CSE 178: Computers and Networks Security [4]
This course will introduce fundamental concepts in the design and development of secure computer networks. It will cover security threats, secret-key and public-key cryptography and algorithms, digital signatures, authentication, Electronic mail, Public-key infrastructure, viruses and worms.
Prerequisite: CSE 150. Letter grade only.

ECON 100: Intermediate Microeconomic Theory [4]
Price determination and resource distribution theory under conditions of perfect and imperfect competition. General equilibrium and welfare economics.
Prerequisite: ECON 001 and (MATH 021 or MATH 011). Letter grade only.

ECON 101: Intermediate Macroeconomic Theory [4]
Analysis of output, employment, interest rates, and the price level. The effects of these on changes in monetary and fiscal variables.
Prerequisite: ECON 001 and (MATH 021 or MATH 011)

ECON 116: Organizational Strategy [4]
Discussion of critical issues in the design and functioning of effective organizations. Topics covered include: the boundary of the firm, firm structure, arrangements within the firm, alliances and contracts between firms, and trust and culture in the firm.
Prerequisite: ECON 001. Major reqs letter grade only

ECON 141: Industrial Relations and Human Resource Economics [4]
Examination of how firms make decisions involving human resources. Topics covered include employee hiring and recruitment, compensation and use of incentives, and employee motivation and teamwork. Builds on both economic theory and practical examples to illuminate key concepts.
Prerequisite: ECON 100. Letter grade only.

ECON 161: International Finance [4]
Examines the determination of exchange rates, managing exchange rate risk, and the international macroeconomy. Topics may include the balance of payments mechanism, international banking and credit risk, the economics of foreign direct investment, international financial crises, and policy issues in international finance such as fixed versus floating exchange rates.
Prerequisite: ECON 100 or ECON 101. Letter grade only.

EECS 265: Computational Geometry [4]
Design and analysis of efficient and robust algorithms for geometric problems in two and three dimensions. Computational geometry algorithms are needed to solve problems in robotics, GIS, solid modeling, etc. Theoretical studies will be complemented by programming assignments. Undergraduate level knowledge of algorithm design and analysis, and linear algebra with programming experience in C/C++/Java and Matlab is strongly suggested.
Letter grade only.

EECS 267: Computer Graphics [4]
This course covers the main algorithms and techniques required to implement modern computer graphics applications transformations, illumination and shading, the OpenGL rendering pipeline, ray tracing, scene graphs, curves and surfaces, solid modeling and representation, meshes, physics based animation, quaternions, and keyframe animation. The course includes practical experimentation of the main techniques in projects developed in C++.
Letter grade only.

EECS 277: Database Systems Implementation [4]
This course studies the internals of a database management system, with emphasis on query execution. The final goals of the class is to build a fully-functional database execution engine consisting of all the standard components: storage manager, buffer manager, query execution engine, query optimizer, and query compiler. *Letter grade only.*

EECS 290: Electrical Engineering and Computer Science Seminar [1]
This invited speaker seminar course gives electrical engineering and computer science graduate students breadth exposure to all the areas in the field.
Prerequisite: Satisfactory/Unsatisfactory grading only. May be repeated for credit. Electrical Engineering & Computer Science major only.

ENGR 065: Circuit Theory [3]
This course introduces fundamental principles of circuit theory commonly used in engineering and science, like circuit parameters and fundamental laws, complex impedance and admittance, steady-sate and transient circuit response, Fourier and Laplace transforms, and common measurement instruments.
Prerequisite: MATH 024 and (PHYS 009 or PHYS 019). Letter grade only.

ENGR 135: Heat Transfer [4]
Study of conduction, convection, and radiation heat transfer, with applications to engineering problems.
Prerequisite: ENGR 120 and ENGR 130 and MATH 131. Offered fall only. Letter grade only.

ENGR 151: Strength of Materials [4]
Stresses and strain in solids with symmetric and asymmetric loads. Stresses in pressure vessels and rotating shafts. Strength and failure, plastic deformation, fatigue and elastic instability.
Prerequisite: ENGR 057 and ENGR 045. Letter grade only.

ENVE 020: Introduction to Environmental Science and Technology [4]
Introduction to historical and current issues in the diverse field of environmental engineering. Principles of mass and energy balance. In-depth analysis of several key innovations from the field that have been instrumental in advancing the field. Design project.
Prerequisite: CHEM 010 and MATH 021. Letter grade only. May be repeated for credit one time.

ENVE 190: Environmental Engineering Capstone Design [3]
Students will work on multidisciplinary teams on selected and approved design projects, practice design methodology, complete project feasibility study and preliminary design, including optimization, product reliability and liability, economics, and application of engineering codes. Final report and presentation.
Prerequisite: ENVE 100 and ENVE 110 and ENVE 130 May be Taken Concurrently and ENVE 160 May be Taken Concurrently. Senior standing. Letter grade only.

ES 212: Subsurface Hydrology [4]
Hydrologic and geologic factors controlling the occurrence and use of groundwater on regional and local scales. Physical, mathematical, geologic, and engineering concepts fundamental to subsurface hydrologic processes. Introduction to ground-water flow and transport modeling, with emphasis on model construction and simulation.
Prerequisite: Permission of instructor required. Letter grade only.

ES 227: Flora of California [5]
This course introduces students to the plant diversity of California. It consists of lectures, discussions, and field trips. The field trips focus on plant identification in the foothills of the Central Sierra Nevada and help illustrate concepts presented in lecture such as endemism, plant/soil interactions, and vegetation types.
Prerequisite: Letter grade only.

ESS 112: Subsurface Hydrology [4]
Hydrologic and geologic factors controlling the occurrence and use of groundwater on regional and local scales. Physical, mathematical, geologic and engineering concepts fundamental to subsurface hydrologic processes. Introduction to ground-water flow and transport modeling, with emphasis on model construction and simulation.
Prerequisite: ENVE 110 or ESS 110. Letter grade only.

GASP 103: History of World Art [4]
This is a survey course of world art with an emphasis on the cultural meaning of forms and the influence of arts on society. The course examines visual arts from around the world in a variety of forms and in their historical, cultural, and sociopolitical contexts.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or WRI 010 or consent of instructor. Letter grade only.

GASP 104: History of World Architecture [4]
This course introduces students to significant examples of world architecture and investigates the ways in which architecture serves as an integral part of cultural, socioeconomic, and political development in cultures around the world.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or GASP 101 or consent of instructor. Letter grade only.

GASP 105: History of Islamic Art and Architecture [4]
This course studies the cultural history of Islamic societies as expressed by their art and architecture from the 7th century to the present. Changes in artistic styles, architectural advances and expression of the written word will be compared across time and geography in social context.
Prerequisite: HIST 005 or HIST 010 or HIST 011 or HIST 016 or HIST 017 or HIST 020 or HIST 021 or HIST 025 or HIST 030A or HIST 030B or HIST 031 or HIST 040 or HIST 041 or HIST 060 or HIST 070 or HIST 071 or HIST 080 or HIST 081 or consent of instructor.

GASP 111: Postmodern Art [4]
This course focuses on the history of twentieth-century visual arts after WWII and the emergence of postmodernism in a global context. It examines artwork and critical theories in relation to historical, cultural and sociopolitical developments in various cultures throughout the world.
Prerequisite: GASP 001 or GASP 002 or GASP 003 or GASP 004 or GASP 005 or GASP 101 or consent of instructor. Letter grade only.

GASP 171: Museums as Contested Sites [4]
Examines issues concerning the historical development of museums and controversies surrounding exhibitions staged by public and private institutions in the United States. Students will also put their critical knowledge and skills into
practice through curating and managing the UCM Art Gallery. Reading and writing intensive.
Prerequisite: GASP 001 or (GASP 002 or GASP 003 or GASP 004 or GASP 005) and (GASP 101 or GASP 102 or GASP 103 or GASP 104) or consent of instructor. Junior standing. Letter grade only.

GASP 172: Curatorial Methods and Practices [4]
Offers students a unique opportunity to acquire and apply a critical set of knowledge and skills in art research and curating. Student will study texts on critical issues in curatorial methods and exhibitory practices, conduct research on artworks, and manage the operations and exhibition programs of the UCM Art Gallery.
Prerequisite: GASP 101 or GASP 102 or GASP 103 or GASP 104 or GASP 171. Permission of instructor required. Junior standing. Letter grade only. May be repeated for credit one time.

HIST 110: Environmental History of the World [4]
This course presents a history, from ancient to modern times, of the interactions between human societies and the natural environment. Itinvestigates the ways in which environmental changes, often the result of human actions, have cause historical trends in human societies.
Prerequisite: HIST 005 or HIST 010 or HIST 011 or HIST 016 or HIST 017 or HIST 020 or HIST 021 or HIST 025 or HIST 030A or HIST 030B or HIST 031 or HIST 040 or HIST 041 or HIST 060 or HIST 070 or HIST 071 or HIST 080 or HIST 081 or consent of instructor.

HIST 112: History of Islamic Art and Architecture [4]
This course studies the cultural history of Islamic societies as expressed by their art and architecture from the 7th century to the present. Changes in artistic styles, architectural advances and expression of the written word will be compared across time and geography in social context.
Prerequisite: HIST 005 or HIST 010 or HIST 011 or HIST 016 or HIST 017 or HIST 020 or HIST 021 or HIST 025 or HIST 030A or HIST 030B or HIST 031 or HIST 040 or HIST 041 or HIST 060 or HIST 070 or HIST 071 or HIST 080 or HIST 081 or consent of instructor.

HIST 122: That's the Joint: Race, Gender, and Migration in Hip-Hop History [4]
This course traces the cultural and political history of Hip-Hop and the impact it has had on society. We will explore the dynamics of Hip-Hop culture, surveying its historical development, political significance, and social influence in the US and the World.
Prerequisite: HIST 017. Junior standing. Letter grade only. May be repeated for credit one time.

HIST 127: Local Harvest, Global Industry: History of the Production and Consumption of Food [4]
This course will look at various ways to understand the complex role of food in society. We will look at issues of food production and consumption, and how our relationship to food contributes to the political and social structures that we live with.
Prerequisite: HIST 016 or HIST 017. Letter grade only. May be repeated for credit one time.

HIST 129: Introduction to Chicano History [4]
This course examines the historical experiences in the US of people of Mexican background from the period of the Spanish frontier to present day.
Prerequisite: Junior standing. Letter grade only.

HIST 170: Law and Society in Early Modern England [4]
A study of the development of both English law (in terms of legislation and legal practice) and constitutional practices in early modern England (c. 1500-1800) in the context of political and social history. Students complete a number of research projects based on primary sources.
Prerequisite: HIST 011 or junior standing or consent of instructor. Letter grade only.

HIST 180: The Silk Road [4]
This course about the long distance conduits of cultural and material exchange that integrated Europe and Asia before the expansion of sea travel focuses upon the routes themselves, the lands they traversed, and their impact on society. Students will also learn how to map the routes using digital globe technology.
Prerequisite: HIST 005 or HIST 010 or HIST 011 or HIST 016 or HIST 017 or HIST 020 or HIST 021 or HIST 025 or HIST 030A or HIST 030B or HIST 031 or HIST 040 or HIST 041 or HIST 060 or HIST 070 or HIST 071 or HIST 080 or HIST 81 or consent of instructor. Junior standing.

HIST 191: Capstone Seminar [4]
A capstone course for history majors, which involves the preparation of an extended research project done under the supervision of a faculty member and with extensive peer review.
Prerequisite: HIST 100. Senior standing. History majors only. Letter grade only.

LIT 042: British Women Writers [4]
Course examines works seen as foundational in the rise of literary production by British women. It includes literature that encompasses multiple genres, asking to what extent the texts in the course reproduce or challenge economic, social and cultural constraints. Authors include Mary Wollstonecraft, Jane Austen, George Eliot, & Virginia Woolf.
Prerequisite: WRI 001. Letter grade only.

LIT 138: Literatures and Cultures of the U.S. Working Class [4]
This course explores the creation of and literary productions by and about the working class in the U.S. It pays special attention to women workers and workers of color.
Prerequisite: WRI 010 and (LIT 020 and LIT 021) or (LIT 020 and LIT 030) or (LIT 020 and LIT 031) or (LIT 020 and LIT 040) or (LIT 020 and LIT 041) or (LIT 020 and LIT 050) or (LIT 020 and LIT 051) or (LIT 021 and LIT 030) or (LIT 021 and LIT 031) or (LIT 021 and LIT 040) or (LIT 021 and LIT 041) or (LIT 021 and LIT 050) or (LIT 021 and LIT 051) or (LIT 030 and LIT 031) or (LIT 030 and LIT 040) or (LIT 030 and LIT 041) or (LIT 030 and LIT 050) or (LIT 030 and LIT 051) or (LIT 031 and LIT 040) or (LIT 031 and LIT 041) or (LIT 031 and LIT 050) or (LIT 031 and LIT 051) or (LIT 040 and LIT 041) or (LIT 040 and LIT 050) or (LIT 040 and LIT 051) or (LIT 041 and LIT 050) or (LIT 041 and LIT 051) or (LIT 050 and LIT 051). Junior standing. Letter grade only.

LIT 173: The Erotic Novel in the Hispanic World, 20th and 21st Centuries [4]
Erotic Novel and Film from Hispanic Modernism (Hoyos y Vinent, Felipe Trigo et al.) to "Neo-Eroticism," "Generations X and Y" (Almodóvar, Lucía Etxebarria et al.), and “Dirty Realism” (Pedro Juan Gutiérrez et al.). Strong theoretical approach includes seminal works of Georges Bataille, George L. Mosse and Michel Foucault, among others.
Prerequisite: LIT 050 or LIT 051. Letter grade only.

LIT 190: Senior Thesis [4]
Capstone course for majors. Completion of a senior thesis. Extensive writing required.
Senior standing. Literatures and Cultures majors only. Letter grade only.

MATH 005: Preparatory Calculus [4]
Preparation for calculus. Elementary functions, trigonometry, polynomials, rational functions, systems of equations and analytical geometry.
Prerequisite: Course cannot be taken after obtaining credit for MATH 021. Letter grade only.

ME 135: Finite Element Analysis [4]
Introduce the basic fundamentals of the finite element methods. Beginning with simple one-dimensional problem, continuing to two- and three-dimensional elements, and ending with some applications in heat transfer, solid mechanics and fluid mechanics. Covers modeling, mathematical formulation, computer implementation and engineering software.
Prerequisite: MATH 023 and MATH 024. Letter grade only.

ME 137: Computer Aided Engineering [3]
Introduction to the use of modern computational tools used for design and analysis. Primary focus will be on product design with solid modeling and finite-element analysis. Software used is representative of that found in industry. Topics such as 2-D and 3-D drawing, tolerance specification, and FEA validation are also covered.
Prerequisite: Junior standing. Offered fall only. Letter grade only.

ME 141: Linear Controls [3]
Dynamics of Linear Systems, Concepts of Stability, Feedback Control, Root Locus Design, Frequency-Domain Analysis and Compensator Design, State-Space Representation, Controllability and Observability, Linear Observers, Matrix Methods for Control Design, Linear Quadratic Regulator (LQR) Optimal Control.
Prerequisite: MATH 024 and ME 140. Letter grade only.

MEAM 210: Linear Controls [3]
Dynamics of Linear Systems, Concepts of Stability, Feedback Control, Root Locus Design, Frequency-Domain Analysis and Compensator Design, State-Space Representation, Controllability and Observability, Linear Observers, Matrix Methods for Control Design, Linear Quadratic Regulator (LQR) Optimal Control. Knowledge in linear algebra and differential equations and Vibration and Controls is strongly suggested.
Letter grade only.

MEAM 261: Energy Storage [3]
This course is intended to provide students an overview on energy storage schemes/devices with major focus on electrochemical storages including ionic batteries, fuel cells and super-capacitors. The course will cover operating principles, physics behind them, characterization methods and advantages/issues of each scheme. Exposure to thermodynamics is recommended but not mandatory.
Letter grade only. May be repeated for credit one time.

MGMT 025: Introduction to Finance [4]
In this course, students explore the fundamentals of finance for organizations. Particular attention is paid to how managers maximize shareholder wealth. This class covers the foundations of financial management, including the time value of money, capital budgeting and evaluation, capital structure, and valuation of various capital sources.

MGMT 026: Introduction to Accounting [4]
A broad introduction to accounting. Students draw up and interpret accountsand are introduced to some key ideas of auditing. Covers the fundamental accounting concepts and how to apply them; record accounting entries, prepare accounts for different business entities and understand the differences between them, the basic principles of auditing.

MGMT 126: Information Systems and Service Design [4]
This course presents an end-to-end view of the design life cycle for information systems and services. It explains how design problems are conceived, researched, analyzed and resolved in different types of organizations and contexts, including start-ups, enterprises with legacy-systems, non-profit and government entities.
Letter grade only. Senior standing. Management and Computer Science & Engineering majors only.

MGMT 141: Industrial Relations and Human Resource Economics [4]
Examines how firms make decisions involving human resources. Topics covered include employee hiring and recruitment, compensation and use of incentives, and employee motivation and teamwork. Builds on both economic theory and practical examples to illuminate key concepts.
Prerequisite: ECON 100. Letter grade only.

MGMT 150: Service Science [4]
Services e.g., restaurants, hotels, lawyers, information technology operations, business consulting -- account for more than 80% of jobs in the US. Through case studies of businesses and scientific studies of people in real service settings, this course focuses on how to align people and technology effectively to generate value.
Prerequisite: Junior or Senior or consent of instructor. Letter grade only.

MGMT 152: Law and Economics [4]
The economic analysis of legal rules and institutions, including property, contract, and tort law. We also consider issues surrounding crime and punishment.
Prerequisite: ECON 100 or MGMT 100

MGMT 173: Advanced Judgment and Decision Making [4]
Advanced study of recent research on judgment and decision making, such as behavioral economics, rationality and intelligence, health and medical decision making, decision neuroscience.
Prerequisite: COGS 153 or MGMT 153 or ECON 153 or POLI 153

MSE 109: Materials Thermodynamics [4]
Thermodynamic laws and principles. Thermodynamics of solid solutions. Phase equilibria in materials systems of one, two and three components. Nucleation and growth vs. spinodal decomposition. Determination and interpretation of equilibrium binary and ternary phase diagrams for metals, ceramics and polymers. Quantitative applications of Ellingham diagrams, phase diagrams and Pourbaix diagrams.
Prerequisite: MATH 021 and PHYS 008 and CHEM 002 and ENGR 045 or consent of instructor. Junior standing. Materials Sci & Engineering, Physics, Environmental Engineering, Bioineering, Mechanical Engineering, Chemical Sciences, and Computer Science & Engineering majors only. Letter grade only.

MSE 111: Kinetics and Processing [4]
Application of kinetic principles to the study of mass transport processes, transformations and reactions in engineering materials. Thermal (including catalytically assisted) activation and rates of processes; nucleation and growth; phase transformations; control of micro- and nano-structure. Applications and case studies relevant to the processing of metals, polymers, ceramics and nanomaterials.
Prerequisite: (ICP 001A or MATH 021) and (ICP 001B or PHYS 008) and CHEM 002 and ENGR 130 May be Taken Concurrently. Junior standing. Materials Sci & Engineering, Physics, Environmental Engineering, Bioineering, Mechanical Engineering, Chemical Sciences, and Computer Science & Engineering majors only. Letter grade only.

MSE 117: New Materials [3]
Sustainable materials and the Environment. "Whole life cycle" concepts and sustainability. Sustainability and eco design. Minimizing resource consumption. Limiting emissions and waste. Analyzing the product life cycle. Green materials. Self-assembling materials. Self-healing materials. Biological and bio-inspired materials.
Prerequisite: ENGR 045 or consent of instructor. Junior standing. Materials Sci & Engineering, Physics, Environmental Engineering, Bioineering, Mechanical Engineering, Chemical Sciences, and Computer Science & Engineering majors only. Letter grade only.

NSED 023: Introduction to Teaching Science in Elementary School [1]
Introduction to teaching science in elementary school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 024: Fieldwork: Introduction to Teaching Science in Elementary School [1]
Fieldwork component for the NSED 23 course. Classroom observations and teaching practicum at an elementary school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. NSED 023
Letter grade only.

NSED 033: Introduction to Teaching Mathematics in Elementary School [1]
Introduction to teaching mathematics in elementary school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 034: Fieldwork - Introduction to Teaching Mathematics in Elementary School [1]
Fieldwork component for the NSED 33 course. Classroom observations and teaching practicum at an elementary school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. NSED 033
Letter grade only.

NSED 043: Introduction to Teaching Science in Middle School [1]
Introduction to teaching science in middle school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 044: Fieldwork - Introduction to Teaching Science in Middle School [1]
Fieldwork component for the NSED 43 course. Classroom observations and teaching practicum at a middle school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. NSED 043
Letter grade only.

NSED 053: Introduction to Teaching Mathematics in Middle School [1]
Introduction to teaching mathematics in middle school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 054: Fieldwork - Introduction to Teaching Mathematics in Middle School [1]
Fieldwork component for the NSED 53 course. Classroom observations and teaching practicum at a middle school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies.
Letter grade only.

NSED 063: Introduction to Teaching Science in High School [1]
Introduction to teaching science in high school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 064: Fieldwork - Introduction to Teaching Science in High School [1]
Fieldwork component for the NSED 63 course. Classroom observations and teaching practicum at a high school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies.
Letter grade only.

NSED 073: Introduction to Teaching Mathematics in High School [1]
Introduction to teaching mathematics in High school. Emphasis on inquiry-based learning practices and effective research-based teaching strategies. Activities include seminars, discussions, and experimentation using inquiry-based learning modules.
Letter grade only.

NSED 074: Fieldwork - Introduction to Teaching Mathematics in High School [1]
Fieldwork component for the NSED 73 course. Classroom observations and teaching practicum at a high school under the guidance of a mentor teacher. Emphasis on inquiry-based learning practices and effective research-based teaching strategies.
Letter grade only.

NSED 098: Lower Division Directed Group Study [1 -5]
Prerequisite: Permission of instructor required. Applied Mathematical Sciences, Physics, Biological Sciences, Chemical Sciences, and Earth Systems Science majors only. May be repeated for credit.

NSED 174: Contemporary Issues in Teaching with Fieldwork [1]
This course combines study and observation of a K-12 classroom setting and reflection the aspects of teaching which have current importance in the field of education. The course includes fieldwork component where students will be working in classrooms of the local K-12 schools.
Prerequisite: (NSED 024 and NSED 034) or (NSED 024 and NSED 044) or (NSED 024 and NSED 034) or (NSED 024 and NSED 044) or (NSED 024 and NSED 054) or (NSED 024 and NSED 064) or (NSED 024 and NSED 074) or (NSED 034 and NSED 044) or (NSED 034 and NSED 054. Letter grade only. May be repeated for credit three times.

PH 001: Introduction to Public Health [4]
This course provides students with an introduction to Public Health, including i) scientific tools, ii) biomedical basis, iii) societal determinants of health, iv) environmental health, iv) role of the medical care system, v) population level interventions, vi) health communication and promotion, and vii) challenges facing public health.
Letter grade only.

PH 125: Emerging Public Health Threats [4]
This course offers a multidisciplinary study of the historical, sociological, medical, and biological issues underlying new public health threats and the scientific and policy-based approaches to responding to these new threats.
Prerequisite: PH 001 or PH 100 or PH 105 or PSY 124 or BIO 001 or BIO 003 or BIO 110. Letter grade only.

PH 195: Upper Division Undergraduate Research [1 -5]
Group or individual research projects in the public health under the supervision of a Public Health faculty member.
Permission of instructor required. Letter grade only. May be repeated for credit.

PHIL 101: Metaphysics [4]
Inquiry into the fundamental nature of reality: the categories of being; the differences between abstract entities, concrete entities, substances, properties, and processes; what constitutes identity of objects through time; necessity and possibility; free will and determinism; space, time, and causation.
Prerequisite: PHIL 001 and PHIL 005 or consent of instructor. Letter grade only.

PHIL 103: Philosophy of Mind [4]
Selected topics in the philosophy of mind, including the relation between mind and body, the self, personal identity, consciousness, and free-will.
Prerequisite: PHIL 005 or consent of instructor. Letter grade only.

PHIL 107: Philosophy of Religion [4]
An examination of core issues in the philosophy of religion, using classical and contemporary sources. Topics may include: arguments for and against the existence of God, differing concepts of the divine, the rationality of religious belief, mysticism, divine foreknowledge and free-will, death and immortality.
Prerequisite: PHIL 001 or PHIL 005 or consent of instructor. Letter grade only.

PHIL 190: Advanced Seminar in Philosophy [4]
Intensive treatment of a special topic or problem within philosophy. May be repeated for credit in different subject area.
Permission of instructor required. May be repeated for credit one time. Junior standing.

PHYS 008H: Honors Introductory Physics I for Scientists and Engineers [4]
Physics 8H is a mathematically intense introduction to classical mechanics designed for majors and other highly motivated students. Utilizing differential and integral calculus, topics include forces, kinetics, energy, momentum, gravity, rotations, waves, and fluids. Advanced coursework in all areas (i.e. homework, etc.) prepares students for success in upper-division physics courses.
Prerequisite: MATH 021 May be Taken Concurrently. Letter grade only.

PHYS 116: Mathematical Methods [4]
This course covers essential mathematical methods for physicists, with an emphasis on Linear Algebra, Partial Differential Equation, and Fourier Transform. The subjects covered in this course are the standard tools for quantum mechanics, classical mechanics, and electrodynamics. This Course Satisfies the Physics Programmatic Learning Outcomes #2: Mathematical Expertise.
Prerequisite: MATH 023 and MATH 024 and PHYS 009.

POLI 010: Understanding Political Controversies [4]
Overview of the application of social scientific methods to the study of politics. Covers research design, hypothesis testing, measurement, and a variety of methodological approaches (e.g. experiments, descriptive and inferential statistics, qualitative analysis) to answering political questions.

POLI 175: Advanced Analysis of Political Data [4]
Advanced course on the application of social scientific methods to the study of politics. Covers quantitative testing of hypotheses about political phenomena, with a particular focus on the use of regression analysis.
Prerequisite: MATH 005 and POLI 010.

PSY 105: Advanced Research Methods in Psychology [4]
Survey of advanced methodological approaches in psychological research.
Prerequisite: PSY 015 or COGS 105 Letter grade only.

PSY 110: History of Psychology [4]
Covers major schools of psychology (functionalism, behaviorism, etc.) and the precursors that lead to psychology as an independent discipline. Focus will be on integration and better understanding the current state of the science of psychology. Themes include the mind/body problem, the nature/nurture debate, and the criteria for a science.
Prerequisite: PSY 015 or COGS 105.

PSY 123: Alcohol, Drugs, and Behavior [4]
Survey of major drugs of abuse, their mode of action, and their behavioral effects, both acute and chronic; etiology and maintenance of drug abuse and review of prominent strategies for prevention, intervention and treatment.
Prerequisite: PSY 001. Letter grade only.

PSY 124: Health Disparities [4]
In this course, we will focus on the differential effect of environmental factors and behavior on human health. In our examination of the determinants of health, we will discuss issues related to ethnic, cultural, and gender psychology, risk behavior, behavioral medicine, psychosocial epidemiology, and policy.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 125: Cognition, Affect, and Health [4]
This course examines how cognitive and emotional processes influence the body's physiological systems in ways that increase or decrease our risk for physical illnesses. We will discuss how thoughts, emotions, and social experiences influence health behaviors such as exercise and diet, and implications for health promotion and illness management interventions.
Prerequisite: PSY 015. Letter grade only.

PSY 130: Developmental Psychology [4]
Critical review of the research and theories on the development of infants and children. Covers cognitive, biological, social, personality, and emotional development, among others. Emphasis on integrating across areas of development, as well as the relative contributions of biology and experience.
Prerequisite: PSY 001. Sophmore standing.

PSY 133: Neurodevelopmental Cognitive, Language and Learning Disorders [4]
This is an introduction to the expression and causes of a variety of cognitive disorders (e.g., reading disability, mental retardation,, dementia, etc.). Genetic syndromes and neurodevelopmental origins are emphasized. Other atypical conditions are discussed as well, including giftedness. Some background in psychology and human biology is advantageous but not required.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 135: Language Acquisition [4]
This course will cover the stages that children go through as they learn their first language. It will also explore the causal mechanisms behind language acquisition as outlined by the major theoretical approaches in the field. Bilingual language acquisition will also be covered.
Prerequisite: (PSY 015 or COGS 105) and PSY 130.

PSY 136: Cognitive Development [4]
Covers the major theories and stages of children's cognitive development. Among others, we cover Piaget, Vygotsky, information processing theories, and connectionist approaches to learning.
Prerequisite: (PSY 015 or COGS 105) and PSY 130. Letter grade only.

PSY 137: Conceptual Development [4]
This course will explore how children learn about specific conceptual domains, such as naive biology and theory or mind. The major theoretical approaches in the area will be covered. Questions of process, such as radical reorganization vs. enrichment of content areas will set the context for the course.
Prerequisite: (PSY 015 or COGS 105) and PSY 130.

PSY 138: Development of the Social Mind [4]
Considers the emergence of social reasoning and behavior from infancy to adulthood. Special focus on the cognitive processes underlying reasoning about others as intentional agents, as members of social groups such as race and gender.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 139: Cognitive Development and Education [4]
How can developmental psychology inform educational practice? We review current developmental theories as well as attempts to apply them to education, with the aim of building an understanding of both the promise and pitfalls of a developmentally based approach to education.
Prerequisite: (PSY 015 or COGS 105) and PSY 130. Letter grade only.

PSY 140: Clinical Psychology [4]
Major theoretical approaches to clinical psychology, including psychoanalysis, existentialism, humanism, systems theory, and behavioral approaches. A review of what clinical psychologists do, including assessment methods, professional roles, and approaches to treatment.
Prerequisite: PSY 001. Letter grade only.

PSY 143: Abnormal Child Psychology [4]
Review of scientific knowledge and approaches to learning about major psychological disorders in childhood, including adolescence. Examples are anxiety, attention deficit, autistic, and substance use disorders. Interventions implemented to prevent or treat these disorders are also examined.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 145: Human Sexuality [4]
Survey of existing knowledge of human sexual behavior; physiological, anatomical, psychological, and cultural components; normative sexual functioning. Such topics as sexual deviation, sexual dysfunctions, and types of treatment are also considered.
Prerequisite: PSY 001

PSY 147: Health Psychology [4]
This course will introduce students to a breadth of topics in health psychology, behavioral medicine, and public health. Particular emphasis is placed on the roles of psychological processes in altering physical and mental health, promoting well-being, preventing illness, and treating disease.
Prerequisite: PSY 001

PSY 150: Psychological Perspective on Cultural, Racial Ethnic Diversity [4]
Issues that bear upon race, ethnicity, and culture, such as the cultural specificity of psychological theories, cultural influences on child development, ethnic identity, psychological issues in immigration, ethnic and racial prejudice, and assessment and interventions with culturally diverse and ethnic minority populations.
Prerequisite: PSY 001. Letter grade only.

PSY 151: The Psychology of Stereotyping and Prejudice [4]
Cognitive processes underlying stereotyping and prejudice are reviewed. Focuses on the relationship between stereotyping and categorization in general, the development of stereotyping and prejudice, and empirical proposals to reduce bias through contact or other forms of intervention.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 159: Personality Psychology [4]
This course examines how individuals are unique and similar to other people. The course will cover major theories in personality that attempt to describe human nature and empirical research on individual differences and personality development.
Prerequisite: PSY 001. Letter grade only.

PSY 160: Cognitive Psychology [4]
Introduction to human information processing, mental representation and transformation, imagery, attention, memory, language processing, concept formation, problem solving, and computer simulation.
Prerequisite: PSY 001 or COGS 001

PSY 161: Perceptual Psychology [4]
This course provides an introduction to data, theoretical constructs, and experimental procedures associated with research on perceptual psychology. Topics include: visual and auditory perception, skin and body senses, chemical senses, person-action perception, and perceptual attention. This course focuses on psychophysics experimental methods, brain imaging techniques, brain function, and perceptual disorders.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 162: Psychology of Visual Perception [4]
This is a comprehensive course on the psychological study of vision, including: color vision, motion, object recognition, depth perception, visual attention, oculomotor behavior, and visual consciousness. Also covered is the neurophysiology and development of the visual system; evolutionary and biological variations of vision; psychophysical methods; and vision disorders.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 170: Industrial and Organizational Psychology [4]
How psychology is applied to industrial and organizational problems, including workplace testing, personnel issues, advertising, etc.
Prerequisite: PSY 001. Letter grade only.

PSY 171: Psychological Tests and Measurement [4]
This course will provide an introduction to how psychological tests and other measurements are developed, evaluated, and used across several areas, such as education, clinical and counseling practice, and businesses. Ethical and legal issues in the use of psychological tests will also be discussed.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 172: Forensic Psychology [4]
Survey of the application of psychology to the criminal justice system, including public policy, sanity, competency, eyewitness testimony and treatment of mentally ill offenders.
Prerequisite: PSY 001. Letter grade only.

PSY 180: Physiological Psychology [4]
Relationship of brain structure and function to behavior, motivation, emotion, language, and learning in humans and other animals. Review of research methods used in physiological psychology and neuroscience.
Prerequisite: PSY 001. Letter grade only.

PSY 181: Clinical Neuropsychology [4]
This course is designed to provide students with an understanding of the theory, method, and practical applications of neuropsychology. Topics include functional neuroanatomy, neuroimaging, neuropsychological assessment, and the complex functions of the normal brain. Neurological and psychiatric disorders of the brain will be described including their diagnosis and treatments.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 182: Evolutionary Psychology [4]
Evolutionary psychology is an approach to psychology in which knowledge and principles from evolutionary biology are implemented in the study of the human mind. This course provides a brief introduction to evolutionary theory, surveys research within the discipline, and discusses interdisciplinary applications within the broader field of psychology.
Prerequisite: PSY 015 or COGS 105. Letter grade only.

PSY 183: Human Behavioral Genetics [4]
This course is an introduction to the genetic (and nongenetic) contributions to individual and group differences observed for a variety of human traits, including personality, psychopathology, intelligence, language, learning, sexuality, health, and some medical conditions. What knowledge is needed in genetics and specialized methodologies will be provided in class.
Prerequisite: PSY 015 or COGS 105

PSY 190: Topics in Psychology [4]
Intensive treatment of a special topic or problem of psychological interest.
Prerequisite: PSY 001. Letter grade only. May be repeated for credit three times.

PSY 202A: Advanced Psychological Statistics I [4]
Topics covered include: descriptive and inferential statistical techniques; correlation and linear regression with one predictor and multiple predictors; linear statistical inference. The goal is to teach the skill of thinking statistically so that the student can learn new techniques independently.
Letter grade only.

PSY 202B: Advanced Psychological Statistics II [4]
Regression; multiple regression; path analysis; introduction to structural equation modeling with latent variables; introduction to multilevel modeling.
Letter grade only.

PSY 209: Longitudinal Data Analysis and Bayesian Extensions [4]
This course focuses on longitudinal data analysis. Analysis of variance, regression, and structural equation modeling approaches will be explored. Traditional frequentist) estimation approaches will be introduced in the beginning of the course. The last portion of the course is devoted to model estimation via the Bayesian estimation framework.
Letter grade only.

PSY 221: Issues in Health Psychology [4]
A survey of selected topics in health psychology not covered in PSY 220. This may include psychological perspectives on major chronic disease, quality of life in people with health conditions, pediatric psychology, aging and health, and the interface between public health and health psychology.
Letter grade only.

PSY 224: Health Disparities [4]
Disease prevalence, severity, and treatment varies across sociodemographic groups. Understanding why health disparities occur is key to determining how inequalities might be alleviated. The focus of this course is on research that a) describes health disparities, b) investigates factors that explain differences, and c) proposes interventions to treat at-risk populations.
Letter grade only.

PSY 225: Health Risk Decision Making [4]
A focus on the decision making process underlying health risk behaviors.Consideration of the role perceptions of risks/benefits, attitudes, emotions, social relationships, and the media play on health decisions, with an emphasis on decision making theories (e.g., rational choice theory, prospect theory, health beliefs model, and the theory of planned behavior).
Letter grade only.

PSY 280: Human Behavioral Genetics [4]
This course explores the genetics of individual and group differences for a variety of traits (e.g., personality, health, learning, abnormal development, etc.). The necessary background in genetics and statistics will be provided through lecture and readings. Methodologies and their critical evaluation will be emphasized.

SOC 107: Law and Society [4]
Familiarizes students with the interrelated fields of criminology, law and society studies, and criminal justice studies. Organized around three well-established interdisciplinary literatures: criminology, sociolegal studies, and criminal justice studies.
Prerequisite: SOC 001

SOC 108: Advanced Topics in Criminology [4]
Sociological concepts and theories are used to analyze the nature, extent, and causes of crime beyond an introductory level, based upon systemic scientific analysis of data. Exploration of criminal trends and analysis of crime as well as the dynamics of law, social control, treatment processes, and victimology will be evaluated.
Prerequisite: SOC 001 and SOC 070

SOC 140: Organizational Behavior [4]
This course examines the evolution of the modern organization, focusing on approaches to strategy and organizational environments. We read social scientific analyses and case studies to trace the history of bureaucratic organizations, and study social science perspectives that emphasize the variation of current organizational forms.
Prerequisite: SOC 001 or ECON 001 or POLI 001. Letter grade only.

SOC 170: Qualitative Research Methods [4]
This course introduces techniques of qualitative research. We will explore research design issues, including developing research questions, selecting methods, and the ethics of research. We will then study the collection, analysis, and presentation of qualitative data.
Prerequisite: SOC 001 and (SOC 015 with a grade of B or better). Letter grade only.

SOC 175: Topics in Advanced Sociological Research Methods [4]
This course provide students with advanced training in the process of sociological research. During the semester students will develop the skills and background knowledge needed to plan and organize sound research projects of their own, and critique others' research.
Prerequisite: SOC 001 and SOC 010 and (SOC 015 with a grade of B or better). Letter grade only. May be repeated for credit one time.

SOC 185: Topics in Sociology [4]
Intensive treatment of a special topic or problem in sociology.
Prerequisite: SOC 001. May be repeated for credit three times.

USTU 020: Introduction to Scientific Problem Solving [2]
The purpose of this class is to introduce students to the methods scientists use for performing rough, order-of-magnitude calculations. Topics discussed will include the scientific method, dimensional analysis, and Fermi problems.
Letter grade only.

WCH 264: Studying Landscape from a Multidisciplinary Perspective [4]
Graduate level course is a multidisciplinary survey of how landscape is understood and theorized in literature, geography, history, art, anthropology and archaeology. Students learn multiple theoretical perspectives in thinking about landscapes and learn how these are applied by reading case studies. This not only aids in teaching theoretical perspectives, but encourages a deeper understanding of the world we live in by acquiring an appreciation of diverse viewpoints.
Letter grade only.

WRI 040: Writing in the Disciplines [4]
This course enables students to explore how academic, professional, and creative discourse varies. Options will be represented in writing assignments such as policy reviews, proposals for community-based research, narrative poetry, factual short stories, abstracts for personal or collaborative research, and editorial responses to politically charged texts.

Prerequisite: WRI 010 or consent of instructor.

WRI 090: Intersections of Creative and Professional Writing [4]
This course examines the relationship betweenartistic and utilitarian writing techniques and priorities. Students will generate texts in various genres of creative writing and professional writing), with primary focus on why texts are constructed in different ways for multiple purposes and varied audiences.
Prerequisite: WRI 025 or WRI 030 or WRI 040. Letter grade only.