DHA 8164. Innovation Theory and Analysis. (3 cr; A-F only)

Theories and factors that influence adoption and diffusion of designed products. Methodologies used in analysis of diffusion processes.

DHA 8170. Topics in Design, Housing, and Apparel. (1-3 cr [max 6 cr]; A-F only. Prereq–Varies with topic)

In-depth investigation of a topic announced in advance.

DHA 8180. Professional Seminar in Design, Housing, and Apparel. (1-2 cr [max 4 cr]; A-F only)

Professional development issues and trends.

DHA 8181. Ethics and Research. (1 cr; S-N only. Prereq–Grad student)

Overview of ethical concerns/questions in conducting/ disseminating research. Mentoring relationships, use of human subjects, data handling, plagiarism, authorship, publishing, research funding, social responsibility of researchers, code of conduct.

DHA 8192. Readings in Design, Housing, and Apparel. (1-3 cr [max 8 cr]; A-F only. Prereq–#)

Independent study and review of books and periodicals under tutorial guidance.

DHA 8193. Directed Study in Design, Housing, and Apparel. (1-3 cr [max 8 cr]; A-F only. Prereq–#)

Guided individual reading or study.

DHA 8222. Plan B Master’s Project. (3 cr; S-N only. Prereq–DHA master’s student, #) Plan B master’s project.

DHA 8262. Writings on Dress: Historical Perspectives. (3 cr; A-F only)

Dress as a significant factor in human interaction prior to 1940. Early social science and philosophical writing, beginning with Montaigne in 1537. These perspectives appraised for relevance to current research and theory.

DHA 8263. Writings on Dress: Contemporary Themes. (3 cr; A-F only, Prereq–#101 or #)

Current conceptualizations and thematic areas in literature of textiles and apparel.

DHA 8265. Dress: Race, Class, and Gender. (3 cr; A-F only. Prereq–#4212 or #)

Dressing the body as a sociocultural and personal expression of an individual’s identity. Gender, race, and class differences in apparel explored to understand the global market, international and niche retailing, as related to clothing practices.

DHA 8266. Aesthetic Concepts Related to Apparel Design. (3 cr; A-F only. Prereq–Grad DHA major or #)

Aesthetics of dress; application of a framework for visual analysis and evaluation.

DHA 8267. Dress and Culture. (3 cr; A-F only. Prereq–#4212 or #)

Cultural factors of identity expressed through dress. Focuses on issues of cultural diversity through analysis of dress and textiles within a specific world region.

DHA 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

DHA 8361. Color, Design, and Human Perception. (3 cr; A-F only. Prereq–Basic color theory course or #)

Perceptual and psychological aspects of color and design. Human factors of color variables and design strategies that can enhance human experience of, and interaction with, color.

DHA 8362. The Nature of Representation in Visual Communication. (3 cr; A-F only. Prereq–Grad DHA major or #)

Relationship of images to the design communication process. Aspects of representation and pictorial information modes. Human interaction with images and their role in increasing understanding, enhancing learning, and possibly affecting human experience.

DHA 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

DHA 8463. Housing: Race and Class. (3 cr; A-F only)

Roles of difference (race, gender, class) in shaping distribution of housing, particularly in cities. Role of housing in patterns of social differentiation.

DHA 8467. Theoretical Perspectives in Housing Studies. (3 cr; A-F only. Prereq–#5467 or #)

Investigation/evaluation of theories applied to study of housing. Levels of analysis. Links between theory, research questions, and methodological approaches.

DHA 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

DHA 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required. [Plan A only])

DHA 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

DHA 8990. MFA Creative Thesis. (6 cr [max 12 cr]; A-F only. Prereq–Completed coursework requirements for MFA in DHA w/multimedia emphasis, #) MFA project.

Development Studies and Social Change (DSSC)

College of Liberal Arts

DSSC 8111. Approaches to Knowledge and Truth: Ways of Knowing in Development Studies and Social Change. (3 cr; S-N only. Prereq–Grad DSSC minor or #)

Approaches practiced by physical, biological, and social scientists and humanities scholars. “Ways of knowing” in different cultures or in different groups within cultures. Team taught by faculty from biological and social sciences and the humanities.

DSSC 8211. Doctoral Research Workshop in Development Studies and Social Change. (1 cr; S-N only. Prereq–Grad DSSC minor or #)

Identification of potential funding sources for field research and the writing of grant proposals. Preparing for and conducting field research. Taken during the year before undertaking field research, typically the third year of graduate study.

DSSC 8212. Doctoral Research Workshop in Development Studies and Social Change. (1 cr; S-N only. Prereq–Grad DSSC minor or #)

Identification of potential funding sources for field research and the writing of grant proposals. Preparing for and conducting field research. Taken during the year before undertaking field research, typically the third year of graduate study.

DSSC 8310. Topics in Development Studies and Social Change. (2-3 cr [max 9 cr]; Prereq–Grad DSSC minor or #)

Offered in conjunction with MacArthur Program on Peace and International Cooperation workshop series.

Dutch (Dutch)

Department of German, Scandinavian, and Dutch College of Liberal Arts

Dutch 5490. Topics in Dutch Literature. (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.

Dutch 5741. Medieval and Early Modern Dutch. (3 cr)

Introduction to the linguistic aspects of medieval and early modern Dutch. Reading and analysis of representative literary texts from the Dutch Middle Ages to 1700.

Dutch 5993. Directed Studies. (1-4 cr [max 12 cr]; Prereq–A, B) Guided individual reading or study.

East Asian Studies (EAS)

Institute of International Studies

College of Liberal Arts

EAS 5940. Topics in Asian History. (1-4 cr [max 16 cr]; Prereq–Grad or #)

Selected topics such as cultural, economic, intellectual, political, and social history.

EAS 8333. FTE: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Master’s student, adviser and DGS consent)

EAS 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required. [Plan A only])

EcoScience, Evolution, and Behavior (EBB)

Department of Ecology, Evolution, and Behavior College of Biological Sciences

EBB 5008. Forest Response to Quaternary Climate Change. (2 cr; A-F only. Prereq–BIol 3407, EEB 4631 or GEO 4631; EEB 5009)

Forest responses to past climate change at the population, community, and ecosystem level. Response to natural and human disturbance, range shifts and invasions. Limitations to the speed of response to rapid climate change.

EBB 5009. Quaternary Vegetation History and Climate. (2 cr. Prereq–#4631 or GEO 4631 or #)

Reconstructing and dating changes in vegetation and climate from Quaternary pollen stratigraphy of major world biomes; evidence from other indicators of past environments; comparison with climate models.

EBB 5011. Pollen Morphology. (2 cr. Prereq–#1007, BIO 4321 or #)

Morphology and nomenclature of pollen grains and pteridophyte spores, survey of pollen and spores of major plant families, lab techniques.

EBB 5013. Quaternary Plant Macrofossils. (2 cr. Prereq–#1007, BIO 4321 or #)

Morphology of seeds, fruits, and other macroscopic remains likely to occur in Quaternary deposits, survey of fossils of major plant families, lab techniques.

EBB 5033. Population and Quantitative Genetics. (4 cr. Prereq–#1007 or GEO 3022, intro statistics or #)

Genetic basis of variation in populations and of evolutionary change. Allelic frequency dynamics: emphasizes natural selection, additive genetic variance, and heritability. Current topics related to consequences of artificial selection and of inbreeding.

EBB 5051. Analysis of Populations. (3 cr. Prereq–Intro biology, intro statistics or #)

Factors involved in the regulation, growth, and general dynamics of populations. Data needed to describe populations, population growth, population models, and regulatory mechanisms.

EBB 5053. Ecology: Theory and Concepts.. (4 cr. Prereq–#1007 or GEO 3022, intro statistics or #)

Classical and modern mathematical theories of population growth, interaction and competition, ecosystem dynamics and functioning, with emphasis on underlying assumptions and on effects of added biological reality on robustness of predictions, stability, interspecific interactions, ecosystem structure and functioning.

EBB 5122W. Plant Interactions with Animals and Microbes. (4 cr; A-F only. Prereq–BIol 2012 or 3047 or 3049)

Ecological and environmental implications of mutualistic and antagonistic interactions between plants, animals and microbes at organismal, population, and community levels.
Courses

EEB 5211. Molecular and Genomic Evolution. (3 cr; A-F only. Prereq—[Biol 4003 or CDD 302] or grad student) Molecular basis of evolutionary change. Current studies of selection and neutral evolutionary processes at the nuclear and mitochondrial genome levels. Introduction to theories and concepts relating to behavioral evolution, mating systems, and cooperative behavior in animals.

EEB 5233. Neural and Endocrine Mechanisms Underlying Vertebrate Behavior. (2 cr; A-F only. Prereq—Biol 3411 or Biol 3101 or NSc 3101 or PhsI 3101 or #) Selected aspects of the physiological basis of vertebrate behavior with emphasis on neural and endocrine integration and the effects of evolutionary pressures on it. Hormones and sex behavior, sensory perception, neuroendocrinology of communication.

EEB 5317. Principles of Systematics. (3 cr. Prereq—#) Theoretical and practical procedures of biological systematics. Phylogenetic reconstruction, including computer-assisted analyses, morphological and molecular approaches, species concepts and speciation, comparative methods, classification, historical biogeography, nomenclature, and use and value of museums.

EEB 5961. Decision Analysis and Modeling in Conservation Biology. (3 cr; A-F only. Prereq—Grad student or #) Decision analysis/modeling in conservation biology. Techniques, concepts, software.

EEB 8010. Seminar in Paleobiology. (1 cr [max 4 cr]; S-N only. Prereq—#) Reading and discussion of recent literature in Quaternary paleobiology.

EEB 8020. Community Ecology Seminar. (1 cr [max 5 cr]; S-N only. Prereq—#) Research topics in selected areas.

EEB 8050. Population Biology Seminar. (1 cr [max 5 cr]; S-N only. Prereq—#) Research topics in selected areas.

EEB 8051. Empirical Ecology. (4 cr. Prereq—Stat or biometry course or #) Overview of analytical methods in interpreting data collected from observational and experimental studies in ecology and related fields of evolution, behavior, and conservation biology. Univariate, bivariate, and multivariate methods, including computationally intensive methods, ordination, and hypothesis testing.

EEB 8060. Evolutionary Genetics Seminar. (1 cr [max 5 cr]; S-N only. Prereq—#) Research topics in selected areas.

EEB 8333. FTE: Master’s. (1 cr; NGA. Prereq—Master’s student, adviser and DDS consent)


Econ 8111. Introduction to Mathematical Economics. (2 cr. Prereq–Math 2243 or equiv, ¶Econ 8101, ¶Math 5615 or equiv or #; Math 6422 recommended) Use of mathematical models in economic theory.


Econ 8113. Introduction to Mathematical Economics. (2 cr. Prereq–Econ 112, Math 5616 or comparable abstract math course, ¶8103) Use of mathematical models in economic theory. May include special topics.

Econ 8117. Noncooperative Game Theory. (2 cr. Prereq–Math 5616 or equiv or #) Solution concepts for noncooperative games in normal form, including Nash and perfect equilibrium and stable sets of equilibria. Extensive form games of perfect and incomplete information, sequential equilibrium, and consequences of stability for extensive form applications. Including bargaining and auctions. Seven-week course.


Econ 8119. Cooperative Game Theory. (2 cr. Prereq–8104, Math 5616 or equiv or #) Basics of cooperative game theory, emphasizing concepts used in economics. Games with and without transferable utility; the core, the value, and other solution concepts. Recent results, including potentials, reduced games, consistency, and noncooperative implementation of cooperative solution concepts. Seven-week course.

Econ 8124. History of Economic Thought. (2 cr. Prereq–8104, 8108 or #) Selected topics, emphasizing development of theoretical topics. Seven-week course.

Econ 8125. History of Economic Thought. (2 cr. Prereq–8124 or #) Selected topics, emphasizing development of theoretical topics. Seven-week course.

Econ 8181. Advanced Topics in Microeconomics. (2 cr. [max 4 cr], Prereq–8104 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8182. Advanced Topics in Microeconomics. (2 cr. [max 4 cr], Prereq–8104 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8185. Advanced Topics in Macroeconomics. (2 cr. [max 4 cr], Prereq–8108 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8186. Advanced Topics in Macroeconomics. (2 cr. [max 4 cr], Prereq–8108 or #) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8191. Workshop in Mathematical Economics. (1-3 cr [max 10 cr], Prereq–8104 or #)

Econ 8192. Workshop in Mathematical Economics. (1-3 cr [max 10 cr], Prereq–8104 or #)

Econ 8201. Econometric Analysis. (2 cr. Prereq–[3101 or equiv], [Math 1277 or equiv], Stat 5102 or #) Basic linear regression model, its variants. Panel data, censored/truncated regression, discrete choice models. Time series, simultaneous equation models.


Econ 8205. Applied Econometrics. (2 cr. Prereq–Math 4242 or equiv, ¶Econ 8101, ¶Econ 8105, ¶Stat 5101 or #) Application in research, including classical and Bayesian approaches; formulation, comparison, and use of models and hypotheses; inference and prediction in structural models; simulation methods. Seven-week course.

Econ 8206. Applied Econometrics. (2 cr. Prereq–8205, ¶Math 5102, ¶Math 5106, ¶Stat 5101 or #) Application in research, including classical and Bayesian approaches; formulation, comparison, and use of models and hypotheses; inference and prediction in structural models; simulation methods. Seven-week course.

Econ 8207. Applied Econometrics. (2 cr. Prereq–8206, ¶Math 5103, ¶Math 5107, ¶Stat 5102 or #) Application in research, including classical and Bayesian approaches; formulation, comparison, and use of models and hypotheses; inference and prediction in structural models; simulation methods. Seven-week course.

Econ 8208. Applied Econometrics. (2 cr. Prereq–8207, ¶Math 5104, ¶Math 5108, ¶Stat 5102 or #) Application in research, including classical and Bayesian approaches; formulation, comparison, and use of models and hypotheses; inference and prediction in structural models; simulation methods. Seven-week course.

Econ 8211. Econometrics. (2 cr. Prereq–5151, 5152, Math 4242 or equiv, Stat 5102 or #) Linear regression; general linear hypotheses; Gauss Markov Theorem, generalized least squares and their applications. Decision-theoretic choice among estimators. Simultaneous equations models; identification and estimation. Asymptotic distribution theory. Applications, including multivariate time series models and/or limited dependent variables models. Seven-week course.

Econ 8213. Econometrics. (2 cr. Prereq–8212) Linear regression; general linear hypotheses; Gauss Markov Theorem, generalized least squares and their applications. Decision-theoretic choice among estimators. Simultaneous equations models; identification and estimation. Asymptotic distribution theory. Applications, including multivariate time series models and/or limited dependent variables models. Seven-week course.

Econ 8281. Advanced Topics in Econometrics. (2 cr. [max 4 cr], Prereq–8213 or #) Faculty and student presentations based on recent literature. This is a 7-week course.

Econ 8282. Advanced Topics in Econometrics. (2 cr. [max 4 cr], Prereq–8213 or #) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8333. FTTE: Master’s. (1 cr; NGA, Prereq–Master’s student, adviser and DGS consent)

Econ 8381. Advanced Topics in Economic Development. (2 cr. [max 4 cr], Prereq–8312 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8382. Advanced Topics in Economic Development. (2 cr. [max 4 cr], Prereq–8312 or #) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8391. Workshop in Economic Growth and Development. (1-3 cr [max 10 cr], Prereq–#)

Econ 8392. Workshop in Economic Growth and Development. (1-3 cr [max 10 cr], Prereq–#)


Econ 8402. International Trade and Payments Theory. (2 cr. Prereq–8401 or #) Tariffs, quotas, and other barriers to trade; gains from trade; trading blocs; increasing returns; growth. This is a seven-week course.

Econ 8403. International Trade and Payments Theory. (2 cr. Prereq–8402 or #) International business cycles; exchange rates; capital movements; international liquidity. This is a 7-week course.
Courses

Econ 8404. International Trade and Payments Theory. (2 cr. Prereq–8402, 8403 or #) Theoretical models of international trade. Trade data, empirical work on trade. Seven-week course.

Econ 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

Econ 8481. Advanced Topics in International Trade. (2 cr max 4 cr. Prereq–8403 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8482. Advanced Topics in International Trade. (2 cr max 4 cr. Prereq–8403 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8491. Workshop in Trade and Development. (1-3 cr max 10 cr. Prereq–#)

Econ 8492. Workshop in Trade and Development. (1-3 cr max 10 cr. Prereq–#)

Econ 8501. Wages and Employment. (2 cr. Prereq–8102, 8106 or #) Economic analysis of labor markets and their operation under conditions of both individual and collective bargaining. Implications of labor market operations for resource allocation, wage and price stability, income and employment growth. Wage structures and wage levels. Wage and employment theories and practices. Economic impacts of unions. Seven-week course.

Econ 8502. Wages and Employment. (2 cr. Prereq–8501 or #) Economic analysis of labor markets and their operation under conditions of both individual and collective bargaining. Implications of labor market operations for resource allocation, wage and price stability, income and employment growth. Wage structures and wage levels. Wage and employment theories and practices. Economic impacts of unions. Seven-week course.

Econ 8503. Wages and Employment. (2 cr. Prereq–8502 or #) Economic analysis of labor markets and their operation under conditions of both individual and collective bargaining. Implications of labor market operations for resource allocation, wage and price stability, income and employment growth. Wage structures and wage levels. Wage and employment theories and practices. Economic impacts of unions. Seven-week course.

Econ 8581. Advanced Topics in Labor Economics. (2 cr max 4 cr. Prereq–8502 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8582. Advanced Topics in Labor Economics. (2 cr max 4 cr. Prereq–8502 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8601. Industrial Organization and Government Regulation. (2 cr. Prereq–8102 or #) Behavior of businesses and industries: productivity, firm size distributions, exit-entry dynamics, etc. Theories of the firm, industry structure and performance, invention and innovation, and technology adoption. Positive and normative theories of regulation. Seven-week course.

Econ 8602. Industrial Organization and Government Regulation. (2 cr. Prereq–8601 or #) Behavior of businesses and industries: productivity, firm size distributions, exit-entry dynamics, etc. Theories of the firm, industry structure and performance, invention and innovation, and technology adoption. Positive and normative theories of regulation. Seven-week course.

Econ 8603. Industrial Organization and Government Regulation. (2 cr. Prereq–8602 or #) Behavior of businesses and industries: productivity, firm size distributions, exit-entry dynamics, etc. Theories of the firm, industry structure and performance, invention and innovation, and technology adoption. Positive and normative theories of regulation. Seven-week course.

Econ 8666. Doctoral Pre-Thesis Credits. (1-18 cr max 60 cr) NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Econ 8681. Advanced Topics in Industrial Organization. (2 cr [max 4 cr. Prereq–8603 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8682. Advanced Topics in Industrial Organization. (2 cr [max 4 cr. Prereq–8603 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8691. Workshop in Applied Microeconomics. (1-3 cr [max 10 cr. Prereq–#)

Econ 8692. Workshop in Applied Microeconomics. (1-3 cr max 10 cr. Prereq–#)

Econ 8701. Monetary Economics. (2 cr. Prereq–8103, 8106 or #) Economic role of principal financial institutions. Determinants of value of money. Principal problems of monetary policy. Seven-week course.

Econ 8702. Monetary Economics. (2 cr. Prereq–8701 or #) Economic role of principal financial institutions. Determinants of value of money. Principal problems of monetary policy. Seven-week course.

Econ 8703. Monetary Economics. (2 cr. Prereq–8702 or #) Economic role of principal financial institutions. Determinants of value of money. Principal problems of monetary policy. Seven-week course.

Econ 8704. Financial Economics. (2 cr. Prereq–8103, 8106 or #) Role of financial institutions in efficient allocation of risk; multiperiod and continuous-time securities markets; theory of firm under uncertainty; financial intermediation; derivation of empirical asset-pricing relationships; tests concerning alternative market structures. Seven-week course.

Econ 8705. Financial Economics. (2 cr. Prereq–8704 or #) Role of financial institutions in efficient allocation of risk; multiperiod and continuous-time securities markets; theory of firm under uncertainty; financial intermediation; derivation of empirical asset-pricing relationships; tests concerning alternative market structures. Seven-week course.

Econ 8706. Financial Economics. (2 cr. Prereq–8705 or #) Role of financial institutions in efficient allocation of risk; multiperiod and continuous-time securities markets; theory of firm under uncertainty; financial intermediation; derivation of empirical asset-pricing relationships; tests concerning alternative market structures. Seven-week course.

Econ 8777. Thesis Credits: Masters'. (1-18 cr max 50 cr) NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required (Plan A only)


Econ 8881. Advanced Topics in Public Economics. (2 cr max 4 cr. Prereq–8803 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8882. Advanced Topics in Public Economics. (2 cr max 4 cr. Prereq–8803 or #; offered when feasible) Faculty and student presentations based on recent literature. Seven-week course.

Econ 8888. Thesis Credits: Doctoral. (1-24 cr max 100 cr) NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Econ 8891. Workshop in Public Economics and Policy. (1-3 cr max 10 cr. Prereq–#)

Econ 8892. Workshop in Public Economics and Policy. (1-3 cr max 10 cr. Prereq–#)

Econ 8990. Individual Graduate Research. (1-7 cr. Prereq–#)

Education (Edc)

College of Education and Human Development

Educ 8333. FTE: Master's. (1 cr; NGA. Prereq–Master's student, adviser and DGS consent)

Educ 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

Educ 8666. Doctoral Pre-Thesis Credits. (1-18 cr max 60 cr) NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Educ 8777. Thesis Credits: Masters'. (1-18 cr max 50 cr) NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required (Plan A only)

Educ 8888. Thesis Credits: Doctoral. (1-24 cr max 100 cr) NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Education and Human Development (EdHD)

College of Education and Human Development

EdHD 5001. Learning, Cognition, and Assessment in the Schools. (3 cr; A-F only. Prereq–MED/init lic student or CLA music ed or preteaching major or #; psych course recommended)

Principles of learning, cognition, cognitive development, classroom management, motivation, instruction, assessment. Approaches include behaviorism, cognitive and social constructivism, human information processing theory. Topics include intelligence, knowledge acquisition, reasoning skills, scholastic achievement, standardized testing, reliability, validity, student evaluation, performance assessment, portfolios, demonstrations. Applications to instruction and organization of curricular materials.

EdHD 5003. Developmental and Individual Differences in Educational Contexts. (3 cr; A-F only. Prereq–MED/init lic or CLA music ed or preteaching major or #)

Overview of developmental and individual differences of children and adolescents in educational contexts; emphasis on a dynamic systems perspective; developmental transitions in childhood and...
adolescence; interactions between the student, environment, and task; and accommodations and adaptations for students in special education.

EdHD 5005. School and Society. (2 cr; A-F only. §EDPA 5090. Prereq—MEd/init lic student or CLA music ed major or preteaching major or §) Readings in history, philosophy, social sciences, and law revealing diverse educational values in a pluralistic society. Multiple expectations of schools. Civil liberties, rights, community. Varying cultural backgrounds of students, family circumstances, exceptional needs.

EdHD 5007. Technology for Teaching and Learning. (1.5 cr; A-F only. §SS 5007 (qtr version), SCI 5300. Prereq—MEd/init lic or CLA music ed major or preteaching major or §; basic computer skills) Diverse educational technology in K-12 classrooms. Effective use of technology. Computer technologies used to stimulate personal productivity/communication and to enhance teaching/learning processes.

EdHD 5009. Human Relations: Applied Skills for School and Society. (1 cr; A-F only. §EDPA 5090. Prereq—MEd/init lic or CLA music ed major or preteaching major or §) Issues of prejudice/discrimination in terms of history, power, social perception. Knowledge/skills acquisition in cooperative learning, multicultural education, group dynamics, social influence, leadership, judgment/decision making, prejudice reduction, conflict resolution, teaching in diverse educational settings.

EdPA Courses

Department of Educational Policy and Administration

College of Education and Human Development


EdPA 5021. Historical Foundations of Modern Education. (3 cr) Analysis and interpretation of important elements in modern education derived from pre-classical sources: Greeks, Romans, Middle Ages, Renaissance, Reformation, Enlightenment, and Industrial Revolution.

EdPA 5023. History of Western Educational Thought. (3 cr) Great educational classics of Western civilization: Plato, Aristotle, Quintilian, Montaigne, Milton, Locke, Rousseau, and others.


EdPA 5028. Education Imagery in Europe and America. (3 cr) Images and ideas of education expressed in the visual arts of Western civilization (antiquity to 20th century) in relation to concurrent educational thought and practice; symbolism, myth, propaganda, didacticism, genre, caricature.

EdPA 5032. Comparative Philosophies of Education. (3 cr) Exploration of the principal philosophies in educational thought today, e.g., realism, idealism, pragmatism, and postmodernism. Practice in philosophical critique.

EdPA 5036. Ethics, Morality, and Values in Education. (3 cr) Application to key issues of professional practice. Moral education, virtues, principles.

EdPA 5041. Sociology of Education. (3 cr) Structures and processes within educational institutions; linkages between educational organizations and their social contexts, particularly related to educational change.

EdPA 5044. Introduction to the Economics of Education. (3 cr) Costs and economic benefits of education, with a focus on K-12; educational markets, prices, and production relationships; investment and cost-benefit analysis.


EdPA 5056. Case Studies for Policy Research. (3 cr; A-F only) Qualitative case study research methods and their applications to educational policy and practice. Emphasis on designing studies that employ open-ended interviewing as primary data collection technique.

EdPA 5061. Ethnographic Research Methods. (3 cr) Practice in aspects of field methodology below the level of full field study; detailed reading; analysis of studies in anthropology and education for methodological content.

EdPA 5064. Divergent Perspectives in Educational Policy and Practice. (3 cr) Examines fundamental and current issues in the field of education. Participants learn how to approach an issue from multiple perspectives, develop skills to identify and analyze its component parts, and examine personal belief systems to place a given issue within a personal context.

EdPA 5080. Special Topics: Educational Policy and Administration. (1-3 cr [max 24 cr]) Topical issues in educational policy/administration.

EdPA 5087. Seminar: Educational Policy and Administration. (1-3 cr [max 24 cr]) Shared responsibility of students/instructor in presentation of topics.

EdPA 5095. Problems: Educational Policy and Administration. (1-3 cr [max 24 cr]) Course or independent study on specific topic within department program emphasis.

EdPA 5096. Internship: Educational Policy and Administration. (1-3 cr [max 24 cr]) Internship in elementary, secondary, general, or postsecondary administration, or other approved field related setting.

EdPA 5101. International Education and Development. (3 cr) Introduction to comparative and international development education, contemporary theories regarding the role of education in the economic, political, and sociocultural development of nations; examination of central topics and critical issues in the field.

EdPA 5102. Knowledge Formats and Applications: International Development Education Contexts. (3 cr) Analyzes the interrelationships of “knowledge capital” (noetic symbolic resources) and culture through intrinsic, cross-, and multicultural perspectives. Distinguishes knowledge from information and data, focusing on national and international developments occurring along basic and applied knowledge paths.

EdPA 5103. Comparative Education. (3 cr) Examination of systems and philosophies of education globally with emphasis upon African, Asian, European, and North American. Foundations of comparative study with selected case studies.

EdPA 5104. Strategies for International Development of Education Systems. (3 cr; A-F only. Prereq—Grad student) Strategies for improving quality/efficiency of schooling in developing countries. Introduction to current research on what policy/programmatic interventions have proven most successful in increasing access, raising quality, and improving efficiency of education in developing countries.

EdPA 5121. Educational Reform in International Context. (3 cr) Critical policy analysis of educational innovation and reform in selected countries. Use theoretical perspectives and a variety of policy analysis approaches to examine actual educational reforms and their implementation.

EdPA 5124. Critical Issues in International Education and Educational Exchange. (3 cr) Analysis of comprehensive policy-oriented frameworks for international education; practices of U.S. and other universities; conceptual development of international education and its practical application to programs, to employment choices, and to pedagogy.

EdPA 5128. Anthropology of Learning. (3 cr) Cross-cultural perspectives in examining educational patterns; the implicit and explicit cultural assumptions underlying them. Methods and approaches to cross-cultural studies in education.

EdPA 5132. Intercultural Education and Training: Theory and Application. (3 cr) Examination of intercultural education; formal and nonformal education programs intended to teach about cultural diversity, promote intercultural communication and interaction skills, and teach students from diverse background more effectively.

EdPA 5301. Contexts of Learning: Historical, Contemporary, and Projected. (3 cr; A-F only) Contextual understanding of education as a social institution. Education is studied as one institution among the several that constitute its dynamic context.


EdPA 5303. Managing the Learning Organization. (3 cr; A-F only) Examines schools, colleges, and other human service organizations centered on learning. Focuses on perspectives and skills needed to manage organizations effectively.

EdPA 5304. Educational Leadership for Equity, Opportunity, and Outcome. (3 cr) Implications of multiple consolidation which leadership occurs. Role of followers. Complexities of collaborative structures and of shared governance.

EdPA 5305. Leadership and Vision in School Technology. (1 cr. Prereq—[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection and version of Netscape, Internet Explorer, virus protection software.) How to create a shared vision for comprehensive integration of technology into educational environments. Ways to foster environment/culture conducive to realizing that vision.

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EdPA 5306. Staff Technology Development and Support. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). How to lead an organization in designing, implementing, evaluating, improving, and sharing approaches to staff development. Technology-related development. Facilitating staff development through use of technology.

EdPA 5307. School Management and Technology. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Various organizational/management issues impacted by information technology. Focuses on hardware, software, and database technologies designed to facilitate management/operations of school organizations.

EdPA 5308. Emerging Issues and School Technology. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Needs of schools/administrators to remain on forefront of information technologies. Focuses on anticipated technological trends years/decades ahead.

EdPA 5309. Electronic Communication Tools and Environment for School. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Various electronic communication channels, information environments to facilitate educational organizations’ operations/communication. Focuses on networked email, conferencing with handheld computers, and outreach to internal/external stakeholders.

EdPA 5310. Data-Driven Decision-Making I. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Data-driven decision-making needs of schools/administrators. Focuses on data collection/analysis needs of educational organizations and on use of appropriate software/databases to collect, manage, analyze, and report school information.

EdPA 5311. Data-Driven Decision-Making II. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Continuation of 5310. Data-driven decision-making needs of schools/administrators. Hands-on training in students’ own organizations in using technology to analyze data to make educational decisions.

EdPA 5312. School Technology Policy Issues. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Various state/national policy issues related to educational technology. Focuses on “digital divide” in schools/communities, federal educational technology policy initiatives, and state/federal educational technology policy legislation.

EdPA 5313. Legal and Ethical Issues in School Technology. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Social, legal, and ethical issues related to school technology. How to model responsible decision-making related to these issues.


EdPA 5315. School Technology Leadership Multimedia Project. (1 cr. Prereq–[Mac or PC] with at least 256 MB of RAM, [Windows NT 2000 or XP or Mac OS 9 or 10], Pentium 2 or faster, internet connection, up-to-date version of Netscape, Internet Explorer, virus protection software). Students focus on individualized school technology leadership topic of choice, deliver a multimedia presentation of project results. Regular consultation with faculty, peer mentors, and outside mentors.

EdPA 5321. The Principalship. (3 cr.) Role of the principal: qualifications, duties, and problems.

EdPA 5322. School Superintendency. (3 cr.) Role/responsibility of superintendent in school district. Emphasizes real life experiences, leadership potential as CEO. Focuses on power, politics, politics, positions of position. Interplay of internal school forces, external community forces analyzed in multiple contexts. Manifestations of leadership in public, high-profile approaches.


EdPA 5324. Financial Management for Elementary-Secondary Administrators. (3 cr.) Provides an overview of state-local school finance systems, budgeting, governmental fund accounting, and interpretation of financial information. For graduate students pursuing licensure as elementary-secondary principals and superintendents.

EdPA 5328. Introduction to Educational Planning. (3 cr.) Principles, tools, comparative practices, and emerging issues in K-12 and higher education settings; decision-making models; strategic and project planning; to effectiveness; and change management processes.

EdPA 5332. Leadership Development Seminar. (3 cr.) Assessment and development of skills required of the educator in planning, program planning, and human relations. Introduction to contemporary issues in educational administration.

EdPA 5336. Laboratory in Decision Making. (3 cr.) Contributions of recent research and theory to effective administration. Analysis of administrative behavior in realistic settings, relations of administration to human behavior.

EdPA 5341. The American Middle School. (3 cr.) Focus on the uniqueness of the early adolescent and appropriate learning situations. For educators working with middle-level students.

EdPA 5344. Legal Aspects of Elementary and Secondary Education. (3 cr.) Overview of legal foundations of elementary/secondary education. Statutory themes, relevant case law, emerging policy issues. Implications for educational organizations and for administrative practice.

EdPA 5346. Politics of Education. (3 cr. A-F only. Prereq–Postbaccaalaurate, at least 3 yrs teaching experience) Theory/practice of politics and power of teacher change. Focuses on community; policy issues surrounding these systems.

EdPA 5372. Youth in Modern Society. (3 cr.) Youth in advanced societies and as a social entity; functions and roles in industrial society, family, education, politics and government, economy and work, welfare and religion; organizations, social movements, and subcultures; empirical research and cross-cultural perspectives.


EdPA 5376. Organizational Approaches to Youth Development. (3 cr.) Defining youth development within framework of formal and informal organizations; organizational systems responsible for youth development in the community; policy issues surrounding these systems.


EdPA 5381. The Search for Children and Youth Policy in the U.S. (3 cr.) Review of contemporary policy issues affecting children and youth in the U.S. and South Africa; identify national standards, norms and principles of youth development; conflicting expectations facing policy-makers; and search for the critical content of youth policy.

EdPA 5384. Collaboration in Heterogeneous Classrooms and Schools. (3 cr. A-F only) Policy, research, practice base for addressing range of student abilities/backgrounds in diverse schools. Collaborative approaches to curricular, instructional, social support.
EdPA 5701. U.S. Higher Education. (3 cr) U.S. higher/postsecondary education in historical/contemporary perspective. Emphasizes structure, history, and purposes of system as a whole.

EdPA 5704. Student and Faculty Issues in Higher Education. (3 cr) College student development, curricular/extracurricular activities, faculty work/development, student-faculty interaction.

EdPA 5721. Racial and Ethnic Diversity in Higher Education. (3 cr) Review of research. Theoretical frameworks, methodological perspectives, and research strategies used to study students, staff, and faculty; historical perspectives.

EdPA 5724. Leadership and Administration of Student Affairs. (3 cr) Scope, administration, coordination, and evaluation of programs in college and university student affairs.


EdPA 5728. Two-Year Postsecondary Institutions. (3 cr) Present status, development, functions, organization, curriculum, and trends in postsecondary, but nonbaccalaureate, institutions.

EdPA 5732. The Law and Postsecondary Institutions. (3 cr) Analysis of court opinions and federal regulations affecting postsecondary educational institutions.

EdPA 5734. Institutional Research in Postsecondary Education. (3 cr; A-F only; Prereq-#5701, EPsy 5231 or EdPA 8261, grad standing; S-N only) Scope, role, administration, research strategies, and evaluation of institutional research in postsecondary institutions. Overview of research methodologies, disciplinary foundations of institutional research. Use of institutional, state, and national databases in addressing full range of institutional missions/functions.

EdPA 8002. Critical Issues in Contemporary Education. (3 cr; Prereq-EdD or PhD student) Meanings of reference from sociological, psychological, historical and philosophical perspectives as related to current and emerging critical issues in education. Participants help design, facilitate, and present the course.

EdPA 8011. Doctoral Research Seminar I. (1 cr; S-N only; Prereq-doctoral student) Introduction/planning for individual program development, preliminary examinations, and dissertation prospectus. Modes of inquiry used in current research in education, databases relating to education, recent writings on literature synthesis, key contributions to education literature.

EdPA 8012. Doctoral Research Seminar II. (1 cr; S-N only; Prereq-EdPA doctoral student) Introduction to quantitative/qualitative research approaches/methods. Nature of research, role of researcher, philosophical perspectives on research, ethical issues in conducting research.

EdPA 8013. Doctoral Research Seminar III. (1 cr; S-N only; Prereq-EdPA doctoral student) Introduction to important quantitative/qualitative approaches employed in educational policy research.

EdPA 8014. Doctoral Research Seminar IV. (1 cr; S-N only; Prereq-EdPA doctoral student) Preparation of thesis prospectus.

EdPA 8087. Seminar: Educational Policy and Administration. (1-3 cr; max 24 cr) Seminar on issues of educational policy and administration.

EdPA 8095. Problems: Educational Policy and Administration. (1-3 cr; max 24 cr) Independent study on issues of educational policy/administration. Arranged with instructor.

EdPA 8096. Internship: Educational Policy and Administration. (1-9 cr; max 24 cr) Internship on issues of educational policy/administration. Arranged with instructor.

EdPA 8104. General Systems Thinking for the Analysis of Education. (3 cr) Critical aspects of historical and contemporary systems philosophy, thinking, and analysis. Development of concepts and skills applicable to coping with evolutionary and chaotic environments. Modeling and simulation of learning systems in rapidly changing national and international contexts.

EdPA 8121. Doctoral Seminar: Comparative and International Education. (1-6 cr; S-N only; Prereq-EdPA PhD candidate) Focuses on needs of students while writing the dissertation; general guidance in how to construct the thesis.

EdPA 8124. Classic Readings in Anthropology and Education. (3 cr; A-F only) Major contributions to theory or working paradigms.


EdPA 8303. Modeling the Learning Organization. (3 cr) Computer software, perspectives on learning organization used to study global education, human service organizations.

EdPA 8304. Leadership and Ethics. (3 cr) Review of major leadership theories, their application to problems of practice in educational organizations. Studies of leadership behavior illustrate major emerging issues in educational management.

EdPA 8321. Data Analysis for Educational Management. (3 cr) Managers of educational organizations are faced with problems that require analysis of a wide range of information. Outlines a frame for data analysis and introduces a set of computer-based tools suited to the practice of educational administration.

EdPA 8333. FTE: Master’s. (1 cr; NGA. Prereq-Master’s student, adviser and DGS consent)

EdPA 8444. FTE: Doctoral. (1 cr; NGA. Prereq-Doctoral student, adviser and DGS consent)

EdPA 8502. Program Evaluation Theory and Models: Qualitative and Quantitative Alternatives. (3 cr; Prereq-#5501 or EPsy 5243) Concepts, approaches, models, and theoretical frameworks for program evaluation that have developed since the 1960s.

EdPA 8595. Evaluation Problems. (1-6 cr; max 24 cr; Prereq-#5501 or EPsy 5243) Independent study of an issue in theory or practice of program evaluation.

EdPA 8596. Evaluation Internship. (1-9 cr; max 24 cr; Prereq-#5501 or EPsy 5243) Hands-on experience in conducting a program evaluation in a real-world setting under supervision of an evaluation professional.

EdPA 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq-Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

EdPA 8702. Administration and Leadership in Higher Education. (3 cr; Prereq-#5001, 5701) Leadership, governance, and administration in higher education through theoretical perspectives and practical analysis. Planning, change, decision making, organizational culture, budgets, conflict.

EdPA 8703. Public Policy in Higher Education. (3 cr; A-F only; Prereq-#5001, 5701) Theories, analytic methods, and critical issues in postsecondary education policy at national/state levels. Equality of educational opportunity, affirmative action, system governance/coordination, research funding, student financial aid, public accountability.


EdPA 8724. Strategic Planning in Higher Education. (3 cr; Prereq-#5701) Strategic planning principles, their application to higher education, pitfalls encountered by planners in higher education. Selected tools of strategic planning/management, strategic planning case studies.

EdPA 8728. Economics of Higher Education. (3 cr) Institutional responses to changing external economic factors; economic effects resulting from higher education’s output in teaching, research, and service; research on institutional and governmental policies.

EdPA 8732. Financing Higher Education. (3 cr; Prereq-#5701) Theories and critical issues in financing postsecondary education. Budgeting, cost-effectiveness, state/federal funding policies, tuition policies, student financial aid, financing educational opportunity.

EdPA 8777. Thesis Credits: Masters’. (1-18 cr [max 50 cr]; NGA. Prereq-Max 18 cr per semester or summer; 10 cr total required [Plan A only])

EdPA 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq-Max 18 cr per semester or summer; 24 cr required)

Educational Psychology (EPsy)

Department of Educational Psychology
College of Education and Human Development

EPsy 5100. Colloquium Series: Research and Issues in Psychological Foundations of Education. (1 cr; max 3 cr; Prereq-Grad student in psychological foundations of education or #) Presentation/critique of faculty/student research.
**Courses**

**EPsy 5101. Intelligence and Creativity.** (3 cr; A-F only) Contemporary theories of intelligence and intellectual development and contemporary theories of creativity and their implications for educational practices and psychological research.

**EPsy 5112. Knowing, Learning, and Thinking.** (4 cr; A-F only) Principles of human information processing, memory, and thought; mental operations in comprehension and problem solving; developing expertise and automaticity; emphasis on applied settings.

**EPsy 5113. Psychology of Instruction and Technology.** (3 cr) Introduction to adult learning and instructional design. Application of core foundational knowledge to development of effective learning environments for adults. Topics include philosophy, learning theories, instructional models, development and experience, individual differences, evaluation, assessment, and technology.

**EPsy 5114. Psychology of Student Learning.** (3 cr; A-F only) Principles of educational psychology: how learning occurs, why it fails, and implications for instruction. Topics include models of learning, development, creativity, problem-solving, intelligence, character education, motivation, diversity, special populations.

**EPsy 5115. Psychology of Adult Learning and Instruction.** (3 cr) Survey of adult learning/instruction. Emphasizes instructional design, learning theories, experience, individual differences, evaluation, tests/measurement, technology. Implications for curricular/instructional design in higher education, continuing education, professional/business related training.

**EPsy 5117. Problem Solving and Decision Making.** (3 cr; A-F only) Strategies, rules, methods, and other cognitive components involved in problem solving and decision making, implications for educational practices, and applied domains.

**EPsy 5125. Psychology of Building Character, Values, and Behavior.** (3 cr; A-F only) New approaches to motivation, building prosocial values and behavior; how to alter values and behavior of anti-social individuals; strengths and weaknesses of traditional approaches to character education; instilling prosocial values as a way to alter negative behaviors.

**EPsy 5135. Human Relations Workshop.** (4 cr) Experiential course addressing issues of prejudice and discrimination in terms of history, power, and social perception. Includes knowledge and skills acquisition in cooperative learning, multicultural education, group dynamics, social influence, effective leadership, judgment and decision-making, prejudice reduction, conflict resolution.

**EPsy 5151. Cooperative Learning.** (3 cr) Participants learn how to use cooperative learning in their setting. Topics include theory and research, teacher’s role, essential components that make cooperative work, teaching social skills, assessment procedures, and collegial teaching teams.

**EPsy 5152. Psychology of Conflict Resolution.** (3 cr) Overview of the field of conflict resolution. Major theories, research, major figures in the field, factors influencing quality of conflict resolution are covered. The nature of conflict, the history of field, and intrapersonal, interpersonal, intergroup conflict, negotiation, mediation are discussed.

**EPsy 5154. Organization Development and Change.** (3 cr) Overview of organizational development and change. Normative models of effective organizations, entry and contracting skills, diagnosis procedures and intervention procedures (data feedback, skills training, continuous improvement, mediation).

**EPsy 5155. Group Dynamics and Social Influence.** (3 cr) Overview of the field of group dynamics with emphasis on social influence. Major theories, research, and figures in the field are covered. Group goals, communication, leadership, decision making, problem solving, conflicts, power, uniqueness theory, deindividuation, and minority influence will be covered.

**EPsy 5156. Social and Personality Influences On Education.** (4 cr; A-F only) Survey of social psychology and personality applied to education. Application of major theories and research to classroom and school practices and educational issues are emphasized. Class sessions include lectures, discussions, simulations, experimental exercises. Intrapersonal, interpersonal, and group dynamics are discussed.

**EPsy 5157. Social Psychology of Education.** (3 cr; A-F only) Overview of social psychology and its application to education. Participants study the major theories, research, and major figures in field. Class sessions include lectures, discussions, simulations, role-plays, and experiential exercises.

**EPsy 5158. Power and Influence in Educational Settings.** (3 cr; Prereq–3xxx course in social sciences or #) How people can influence others and avoid manipulation. Factors that shape the extent to which influence is successful. Indirect/direct influence processes, minority influence, motivation, behavior management, conformity, followership, group dynamics, behavior management.

**EPsy 5191. Education of the Gifted and Talented.** (3 cr; A-F only) Theories of giftedness, talent development, instructional strategies, diversity and technological issues, implications for educational practices and psychological inquiry, and international considerations.

**EPsy 5200. Special Topics: Psychological Foundations.** (1-4 cr [max 30 cr]) Focus on special topics in psychological and methodological concepts relevant to advanced educational theory, research, and practice not covered in other courses.

**EPsy 5216. Introduction to Research in Educational Psychology.** (3 cr; A-F only, Prereq–5261 or other intro statistics course) Introduction to educational research, leading students through the basic elements involved in designing and conducting a research study. Topics include reviewing literature, formulating research problem, using different approaches to gather data, managing and analyzing data, and reporting results.

**EPsy 5221. Principles of Educational and Psychological Measurement.** (4 cr, Prereq–5261 or equiv) Concepts, principles, and methods in educational/psychological measurement. Reliability, validity, item analysis, scores, score reports (e.g., grades). Modern measurement theories, including item response theory and generalizability theory. Emphasizes construction, interpretation, use, and evaluation of assessments regarding achievement, aptitude, interests, attitudes, personality, and exceptionality.


**EPsy 5231. Introductory Statistics and Measurement in Education.** (4 cr, Prereq–5261, 5263) Students develop an understanding of basic statistics and measurement concepts and tools and apply them to the collection, analysis, and interpretation of data.

**EPsy 5243. Principles and Methods of Evaluation.** (3 cr) Introductory course in program evaluation: planning an evaluation study, collecting and analyzing information, reporting results; overview of the field of program evaluation.

**EPsy 5244. Survey Design, Sampling, and Implementation.** (3 cr, Prereq–5221 or 5231 or 5261 or equiv) [CEHD grad student or MEd student] Survey methods, including mail, phone, and Web-based/email surveys. Principles of measurement, constructing question forms, pilot testing, sampling, data analysis, and reporting. Students develop a survey proposal and a draft survey, pilot the survey, and develop sampling/data analysis plans.

**EPsy 5246. Evaluation Colloquium: Psychological Foundations.** (1 cr, max B 8 cr, S-N only, Prereq–5243/EdPA 5501) Informal seminar of faculty and advanced students interested in the issues and problems of program evaluation.

**EPsy 5247. Qualitative Methods in Educational Psychology.** (3 cr, Prereq–Grad student) Introduction to qualitative methods of inquiry. Contrasting different research traditions (e.g., case study, phenomenology, ethnography, social interactionism, critical theory). Practice with field notes, observations, and interviewing. Use of NVIVO to track/code data.


**EPsy 5281. Introduction to Computer Operations and Data Analysis in Education and Related Fields.** (3 cr, S-N only) Introductory computer literacy course to familiarize students with personal computers and computing resources at the University. Applications include electronic communications, spreadsheets, graphical presentation, and data analysis.

**EPsy 5300. Special Topics in Educational Psychology.** (1-9 cr, max 9 cr) Current issues in educational psychology or related areas not normally available through regular curriculum offerings.

**EPsy 5400. Special Topics in Counseling Psychology.** (1-4 cr, max 8 cr) Theory, research, and practice in counseling and student personnel psychology. Topics vary.

**EPsy 5401. Counseling Procedures.** (3 cr, Prereq–Upper div student) Emphasis on the counseling relationship and principles of interviewing. Case studies, role playing, and demonstration. For individuals whose professional work includes counseling and interviewing.

**EPsy 5412. Introduction to Developmental Counseling and Guidance.** (3 cr, Prereq–4) Contemporary models of counselors as advocates for all students. Emphasizes prevention and systems intervention with counselors involved in the
developmental guidance curriculum, school change, staff and community collaboration, individual student planning, and learning success with diverse populations.

**Epsy 5415. Child and Adolescent Development and Counseling.** (3 cr; AF-only. Prereq–Grad student or MEd student or K-12 [counseling endorsement or licensure] student)


**Epsy 5421. Leadership and Administration of Student Affairs.** (3 cr; AF-only)

Theoretical approaches, administrative structure, and evaluation methods used in college/university student affairs.

**Epsy 5422. Principles of Group Work: Theory and Procedures.** (3 cr. Prereq–Advanced undergrad or grad student in the helping professions)

Principles and practices of group work for educators and the helping professions. Discussion of various types of groups (e.g., counseling support, task, psychoeducational). Applications to various settings and populations (e.g., schools and community agencies).

**Epsy 5432. Foundations of Individual/Organizational Career Development.** (3 cr; AF-only)

Introduction to individual and organizational career development theory and practice. Examines critical issues in work patterns, work values, and workplaces in a changing global society, with implications for career planning, development, and transitions, emphasizing personal and organizational change. For nonmajors: serves students in adult ed, HRD, JR, college student advising, and other related fields.

**Epsy 5433. Counseling Women Over the Life Span.** (3 cr. Prereq–Counseling or career development course)

Counseling skills and interventions to facilitate career development of girls and women of different life stages and backgrounds (school girls to older women); developmental issues from a systematic integrative life planning framework; facts, myths, and trends regarding women’s changing roles.

**Epsy 5434. Counseling Adults in Transition.** (3 cr. Prereq–Advanced undergrad or grad student in the helping professions)

Psychological, physical, and social dimensions of adult transitions (e.g., family and personal relationships, career). Adult development theories, stress and coping, and helping skills and strategies as they relate to adult transition.

**Epsy 5451. The College Student.** (3 cr)

The psychology and sociology of college students, including research concerning diversity of populations, vocational development of students, student society, culture, mental health, underachievement, dropouts, values and attitudes, and relevant research methods.

**Epsy 5461. Cross-Cultural Counseling.** (3 cr; A-F only)


**Epsy 5601. Survey of Special Education.** (2 cr)

Introduction to programs and services provided to people with disabilities in school and community settings. Emphasis on the needs of families, to the roles and responsibilities of teachers, and to related service providers.

**Epsy 5602. Computer Technology in Special Education.** (2 cr; AF-only)

Develop skills, understand processes, and identify resources needed to utilize technology to benefit persons with disabilities. Emphasis on learning theory, principles of effective instruction, instructional and assistive technology integration.

**Epsy 5603. Childhood Language Development: Classroom Interventions.** (3 cr)

Recent trends and findings in the study of language acquisition and communication; classroom implications, including education of exceptional children and implications of diversity on instruction.

**Epsy 5604. Transition From School to Work and Community Living for Persons With Special Needs.** (2 cr)

Design of training programs to promote independent living. Vocational and community adjustment for persons with disabilities and who are at-risk. Curriculum materials, methods, and organizational strategies for adolescents and adults, families, and community service providers.

**Epsy 5609. Family-Centered Services.** (2 cr; A-F only)

Methods for collaborating with families in the education of children with disabilities. Focus on family-centered approach to design of educational plans and procedures. Specific emphasis on multicultural perspectives of family life and expectations for children.

**Epsy 5612. Understanding of Academic Disabilities.** (3 cr; A-F only)

Introduction to issues related to the education of students with academic disabilities (learning disabilities, emotional/behavioral disabilities, and emotional/behavioral disabilities) including history, definition, assessment, classification, legislation, and intervention approaches.

**Epsy 5613. Foundations of Special Education I.** (3 cr; A-F only. Prereq–Child development course, 5601 or equiv.)

Emphasis on the organization of educational programs and services for people with disabilities and their families. First course for students seeking to become licensed teachers in special education.

**Epsy 5614. Foundations of Special Education II.** (3 cr; A-F only. Prereq–5613)

Emphasis on assessment, planning, and implementing educational programs for people with disabilities. Second course for students seeking to become licensed teachers in special education.

**Epsy 5615. Advanced Academic Interventions.** (3 cr; A-F only. Prereq–5612)

Develop knowledge and skills in designing, implementing, and evaluating Individual Educational Plans (IEPs) for students eligible for special education service in learning disabilities, emotional/behavioral disorders, and mild mental intellectual disabilities.

**Epsy 5616. Behavior Analysis and Classroom Management.** (3 cr)

Introduction to assumptions, principles, and procedures of behavioral approach to analyzing behavior and programs for classroom management. Emphasis on specifying problems, conducting observations, intervening, and evaluating behavioral change.

**Epsy 5621. Functional/Basic Academic Interventions in Mental Retardation.** (3 cr; A-F only. Prereq–5613, 5614)

Methods and materials course emphasizing functional approaches to promoting academic learning in students with mild to moderate mental retardation and moderate to severe mental retardation.

**Epsy 5622. Programs and Curricula for Learners With Severe Disabilities.** (3 cr. Prereq–5616)

Emphasis on developing curricula and instructional programs for students with moderate, severe, and profound developmental delays, as well as severe multihandicapping conditions. Special consideration given to preparing children and youth for integrated community environments.

**Epsy 5624. Biomedical and Physical Aspects of Developmental Disabilities.** (2 cr; AF-only)

Anatomy, physiology, and kinesiology. Central and peripheral nervous system, Prenatal, perinatal, and postnatal developmental. Physically disabling conditions. Management/education procedures.

**Epsy 5625. Education of Infants, Toddlers, and Preschool Children With Disabilities: Introduction.** (2 cr; A-F only)

Overview of the issues, problems, and practical applications in designing early intervention services for young children with disabilities and their families.

**Epsy 5626. Seminar: Developmental Disabilities and Instructional Management.** (3 cr. Prereq–5621, 5622 or #)

Data-based strategies for school and nonschool instruction of learners with developmental disabilities including assessment, design, implementation, and evaluation of curriculum and instruction: curriculum content, concept and task analysis, classroom arrangements, natural and instructional cues, corrections, and consequences.

**Epsy 5635. Education of Students With Physical and Health Disabilities.** (3 cr; A-F only. Prereq–5601 or #)

Introduction to students with physical and health disabilities and their characteristics; the educational implications of physical disabilities; assessment procedures and appropriate educational interventions for learners with physical and health disabilities.

**Epsy 5636. Education of Multihandicapped Learners With Sensory Impairments.** (2 cr. Prereq–5635, 5614)

Characteristics of learners with visual and auditory impairments; design of instructional programs to remediate or circumvent disabilities, including use of prosthetic devices; related areas of performance affected by sensory impairments.

**Epsy 5641. Foundations of Education for Individuals Who Are Deaf/Hard of Hearing.** (3 cr)

Historical and current issues related to education of individuals who are deaf or hard of hearing. Implications of causes of hearing loss, social and cultural relationships, philosophies of education, characteristics and legislative guidelines and their applicability to education of individuals who are deaf or hard of hearing.

**Epsy 5642. Early Childhood Intervention for Infants, Toddlers, and Preschoolers Who Are Deaf/Hard of Hearing.** (3 cr)

First course for students seeking to become licensed teacher in deaf education licensing program or #) Early identification/assessment. Family-centered, interdisciplinary servicing. Program development for infants, toddlers, preschoolers who are deaf/hard of hearing. Presentations, discussions, activities.

**Epsy 5644. Language Development and Programming for Deaf/Hard of Hearing Children.** (3 cr)


**Epsy 5646. Reading and Writing Practices With Deaf/Hard of Hearing Children.** (3 cr. Prereq–5644 or general educ methods in tchg reading and writing skills, or #)

Gain knowledge and skills to assess, plan, and implement instruction for children and youth with hearing loss. Emphasis is placed on research, theoretical, and programmatic issues in developing reading and writing skills, curricular adaptations, and effective instructional approaches.

**Epsy 5647. Aural and Speech Programming for Persons Who Are Deaf/Hard of Hearing.** (3 cr)

Study of the speech and hearing mechanisms, causes of hearing loss, and rehabilitation methods. Emphasis on instructional practices, aural rehabilitation in the educational setting, adaptive technology, and adaptations to optimize functional skills with individuals who are deaf or hard of hearing.

**Epsy 5648. Communication Systems for Children With Disabilities.** (2 cr)

### Courses

**EPsy 5649. Models of Instructional Programming With Deaf and Hard of Hearing Students.** (3 cr; Prereq–[5641, 5644] or #)
Design/development of portfolios for various models of educational service delivery systems for individuals with hearing loss who require consultation skills, curriculum management/modifications, material/technology applications, and support service adaptations.

**EPsy 5656. Social and Interpersonal Characteristics of Students With Disabilities.** (3 cr; A-F only)
Emphasis on children and youth of school age and on the ways in which their emotional, social, and behavioral disorders affect their functioning in school and on ways in which their behaviors disturb others.

**EPsy 5657. Interventions for Social and Emotional Disabilities.** (3 cr; A-F only; Prereq–5676, 5656)
Developing comprehensive behavioral programs for students with social and emotional disabilities. Instructing students with social and emotional disabilities.

**EPsy 5671. Literacy Braille.** (3 cr; A-F only)
Mastery of literacy braille code including all contractions and short-form words used in Grade 2 English Braille: American Usage. Use of specialized braille writing equipment including, braille writer, slate and stylus, and computer programs with six-key input.

**EPsy 5672. Advanced Braille Codes.** (2 cr; A-F only; Prereq–5671 or #)
Mastery of the Nemeth code for braille mathematics transcription including elementary math computation, algebra, geometry, trigonometry, and symbolic logic notation. Introduction to foreign languages, computer notation, music, and raised line drawing techniques.

**EPsy 5673. Reading and Writing for Children With Visual Disabilities.** (2 cr; A-F only; Prereq–5671, CI 5414 or equiv, or #)
Principles of preparation, selection, and use of instructional materials and adaptive technology for children with visual disabilities, including use of braille, large print, audiotape, and computer files to access electronically convert information between these different media.

**EPsy 5674. Techniques of Orientation, Mobility, and Independence for Students With Visual Disabilities.** (3 cr; A-F only; Prereq–5675 or #)
Introduction to basic techniques to gain skills in pre-cane techniques, orientation to learning environments, and adaptations for activities of daily living and independence. Introduction to mobility maps, consideration of cane, guide dog, and telescopic aids to mobility.

**EPsy 5675. Structure and Function of the Eye: Educational Implications.** (3 cr; A-F only)
Anatomy and physiology of the eye and its relation to visual perception. Educational considerations for students with low vision studied in relation to ophthalmological and optometric evaluations and functional vision assessment.

**EPsy 5676. Case Management for Children With Visual Disabilities.** (3 cr; A-F only; Prereq–5671, 5673, 5675)
Advanced course evaluating and managing cognitive, psychosocial, physical, and academic needs of students. Consideration of parent, teacher, and student in counseling and educational program management.

**EPsy 5681. Education of Infants, Toddlers, and Preschool Children With Disabilities: Methods and Materials.** (3 cr; A-F only; Prereq–5625)
Overview of the methods and materials available to maximize the developmental and educational outcomes for infants, toddlers, and preschoolers with disabilities and their families in home, community, and school-based settings.

**EPsy 5701. Practicum: Field Experience in Special Education.** (1-6 cr; [max 12 cr]; A-F only; Prereq–[5614, [FOE or SpEd grad or licensure student]] or #)
Observational support of teaching practice in schools or agencies serving children with disabilities in integrated programs.

**EPsy 5720. Special Topics: Special Education.** (1-6 cr; [max 12 cr]; A-F only; Prereq–[5614, [FOE or SpEd grad or licensure student]] or #)
Lab and fieldwork approach, often assuming a product orientation, e.g., generation of action plan, creating set of observation field notes, collecting data in some form. Provides opportunities for educational personnel to study specific problems and possibilities related to special education.

**EPsy 5740. Special Topics: Interventions and Practices in Educational and Human Service Programs.** (1-6 cr; [max 8 cr]; Prereq–#)
Concepts, issues, and practices related to the community inclusion of children, youth, and adults with developmental disabilities through weekly seminar and extended supervised experience working with individuals within the community.

**EPsy 5751. Student Teaching: Deaf/Hard of Hearing.** (1-6 cr; [max 10 cr]; Prereq–#)
Students participate in educational programming for infants, children, and youth who are deaf or hard of hearing, as well as in on-site, directed experiences under the supervision of master teachers of deaf and hard of hearing students.

**EPsy 5752. Student Teaching: Learning Disabilities.** (1-6 cr; [max 10 cr]; S-N only; Prereq–#)
Supervised experience in teacher or related work in schools or other agencies serving children and adolescents with learning disabilities.

**EPsy 5753. Student Teaching: Early Childhood Special Education.** (1-6 cr; [max 8 cr]; S-N only; Prereq–#; completion of all course requirements for license in ECSE)
Supervised experience in teacher or related work in schools, agencies, or home settings with infants, toddlers, and preschoolers with disabilities and their families.

**EPsy 5754. Student Teaching: Social and Emotional Disabilities.** (1-6 cr; [max 6 cr]; A-F only; Prereq–Completion of all licensure coursework #)
Teach students with social and emotional disorders at public schools and other appropriate sites. Attend a weekly seminar on student teaching competencies.

**EPsy 5755. Student Teaching: Developmental Disabilities, Mild/Moderate.** (1-6 cr; [max 6 cr]; A-F only; Prereq–Completion of all licensure coursework #)
Teach students with moderate developmental disabilities.

**EPsy 5756. Student Teaching: Developmental Disabilities, Moderate/Severe.** (1-6 cr; [max 6 cr]; A-F only; Prereq–Completion of all licensure coursework #)
Teach students with severe developmental disabilities.

**EPsy 5757. Student Teaching: Physical and Health Related Disabilities.** (1-6 cr; [max 8 cr]; A-F only; Prereq–#)
Supervised student teaching and related work (direct instruction and consultation) in schools or other agencies serving children and adolescents who have physical disabilities.

**EPsy 5758. Student Teaching: Visual Impairments.** (1-6 cr; [max 8 cr]; A-F only; Prereq–#)
Supervised student teaching, or special practicum project, in schools or other agencies serving children and adolescents who have visual impairments.

**EPsy 5800. Special Topics in School Psychology.** (1-9 cr; [max 9 cr])
Current issues in school psychology or areas not normally available through regular curriculum offerings.

**EPsy 5801. Assessment and Decision Making in School and Community Settings.** (3 cr; A-F only)
Introduction to psychological and educational assessment for individuals who work with children, especially those experiencing academic and behavior problems. Study of standardized group and individual test of intelligence, achievement, socio-emotional functioning, perception, reading, mathematics, adaptive behavior, and language.

**EPsy 5849. Observation and Assessment of the Preschool Child.** (3 cr)
Introduction to assessment principles and practices, including observational assessment methods for children (birth to 5). Intended primarily for teachers in training and others interested in basic information regarding assessment and its relationship to intervention services for young children.

**EPsy 5851. Collaborative Family-School Relationships.** (3-6 cr; Prereq–Honors senior class or grad student)
Theoretical and empirical bases for creating collaborative family-school relationships for students’ development and educational success in school. Emphasis on model programs for K-12 and practical strategies for educational personnel to address National Educational goal.

**EPsy 5852. Prevention and Early Intervention.** (3 cr)
Theory/research base for school-based primary/secondary programs to promote academic/social competence of children/youth (birth to grade 12).

**EPsy 5871. Interdisciplinary Practice and Interagency Coordination in Education and Human Services.** (3 cr)
Principles and procedures for interdisciplinary practice and interagency coordination. Examine the relative strengths of interdisciplinary approaches, develop skills for collaborating with others, and examine different approaches to interagency coordination.

**EPsy 5991. Independent Study in Educational Psychology.** (1-8 cr; [max 20 cr]; A-F only; Prereq–#)
Self-directed study in areas not covered by regular courses. Specific program of study is jointly determined by student and advising faculty member.

**EPsy 8111. Seminar: Knowledge and Skill.** (3 cr; A-F only; Prereq–Learning and cognition courses)
Analysis of expertise in human problem solving; representation of knowledge and skill; issues in human and artificial intelligence; semantic memory; processes of acquisition; research in cognitive science useful for educational practice; design of educational environments.

**EPsy 8114. Seminar: Cognition and Learning.** (3 cr)
Advanced study in critical analysis and application of contemporary psychological theory and research in cognition and learning for education.

**EPsy 8115. Psychology of Instruction and Technology.** (3 cr)
Seminar including, but not limited to, learning and instructional theories, advanced and emerging technologies, and measurement and evaluation.

**EPsy 8116. Reading for Meaning: Cognitive Processes in the Comprehension of Texts.** (3 cr; Prereq–#)
Students read primary articles on cognitive processes involved in reading comprehension. Focuses on inference making during reading and on construction of a coherent memory representation. Computational models, neurological processes, developmental/individual differences, effects of text genre (e.g., expository, narrative).

**EPsy 8117. Writing Empirical Paper and Research/Grant Proposals in Education and Psychology.** (3 cr; Prereq–#)
Scientific writing skills. Focuses on logic/argumentation. Each student produces an empirical paper or research proposal. Breaks down the writing process into components: concept meeting each week. Each week, students write a section of their paper/proposal and critique others.

**EPsy 8131. Development of Moral-Political Judgment.** (3 cr; A-F only)
Current research topics in socio-political moral judgment and moral development.
**EPsy 8132. Personality Development and Socialization.** (3 cr; Prereq—Personality or child psych course) Major research and theoretical work. Developmental and educational influences on personality.

**EPsy 8216. Seminar: Research Processes in Psychological Foundations of Education.** (3 cr; A-F only. Prereq—8261 or equiv; admitted to doctoral program in psych foundations) or #) Advanced examination of research processes in educational psychology. Invited faculty discuss specific research designs. Students refine/implement research projects and present them in class.

**EPsy 8221. Psychological Scaling.** (3 cr; Prereq—8221 or equiv, 8261-8262 or equiv) Elementary and advanced topics in unidimensional and multidimensional scaling; measurement theory and statistics, rating scales and other category scaling methods, magnitude estimation, paired comparisons, multi-attribute scaling, and multidimensional scaling.

**EPsy 8222. Advanced Measurement: Theory and Application.** (4 cr; Prereq—8221 or Psy 5862 or equiv, 8261 or 8262 or equiv) Generalizability theory, item response theory, factor models for test items, binomial model. Application to problems of designing, linking assessments. Includes a computer lab.

**EPsy 8261. Statistical Methods I: Probability and Inference.** (3 cr; Prereq—5261 or equiv, grad student) Advanced theory, derivations of quantitative statistics. Descriptive statistics, probability, normal distribution. One-/two-sample hypothesis tests, confidence intervals. Chi square tests. One-way analysis of variance, follow up tests.

**EPsy 8262. Statistical Methods II: Regression and the General Linear Model.** (3 cr; Prereq—8261 or equiv) Analysis of variance designs (two-/three-way), repeated measures, correlation, simple/multiple regression, regression methods, non-parametric procedures, multivariate analyses.

**EPsy 8263. Design and Analysis of Experiments.** (3 cr; Prereq—8261, 8262 or equiv) Advanced treatment of various experimental designs, including completely randomized factorial, randomized block, hierarchical, repeated measures, and Latin square designs. Major computer packages used for data analyses. Univariate and multivariate approaches to these designs.

**EPsy 8264. Advanced Multiple Regression Analysis.** (3 cr; Prereq—8261-8262, regression and ANOVA course, familiarity with a statistical analysis package) General linear model used as a context for regression. Matrix algebra, multiple regression, path analysis, polynomial regression, standardized regression, stepwise solutions, analysis of variance, weighted least squares, and logistic regression.

**EPsy 8265. Factor Analysis.** (3 cr; Prereq—8262, familiarity with a statistical analysis package) Factor analytic techniques and applications. Component, common factor, and image analysis; general discussion of factor extraction. Estimating number of dimensions, rotation, and factor score estimation.

**EPsy 8266. Statistical Analysis Using Structural Equation Models.** (3 cr; Prereq—8263 or 8264) Quantitative techniques using manifest and latent variable approaches for analysis of educational and social science data. Introduction to structural equation modeling approaches to multiple regression, factor analysis, and path modeling. Developing, estimating, and interpreting structural equation models.

**EPsy 8281. Advanced Statistical Computing and Data Analysis.** (3 cr; Prereq—8261 or equiv, 8281 or equiv) Cross-disciplinary course. Students learn to use SAS statistical package to perform data management, data analysis, and report writing.

**EPsy 8290. Special Topics: Seminar in Psychological Foundations.** (1-6 cr; max 15 cr) Prereq—#) Students formulate research designs. Learning and cognition, social psychology, measurement, and statistics.

**EPsy 8295. Problems: Evaluation.** (1-6 cr; max 6 cr) Prereq—5243 or equiv; admitted to doctoral program in math foundations) or #) Individually directed study of an issue in the theory or practice of program evaluation.

**EPsy 8296. Internship: Evaluation.** (1-9 cr; max 9 cr) Prereq—5243 or EdPA 5501, #) Hands-on experience in conducting a program evaluation in a real-world setting under supervision of an evaluation professional.

**EPsy 8300. Special Topics in Educational Psychology.** (1-4 cr; max 9 cr) Issues or related coursework in areas not normally available through regular curriculum offerings.

**EPsy 8303. FTE: Master's.** (1 cr; NGA. Prereq—Master's student, adviser and DGS consent)

**EPsy 8400. Topics: Counseling and Student Personnel Psychology.** (1-3 cr; max 9 cr) Current issues in counseling and student personnel psychology, or related coursework in areas not normally available through regular curriculum offerings.

**EPsy 8402. Individual Counseling: Theory and Applications.** (3 cr; A-F only. Prereq—Grad ed psy major with CSPP subgroup or #) Traditional and contemporary theories of counseling and psychotherapy. Applications to various settings and populations.

**EPsy 8403. Social/Contextual Cultures: Counseling and Skills.** (3 cr; A-F only) Prereq—Grad ed psy major with CSPP subgroup or #) Broad personal dimensions of race, ethnicity, gender, class, beliefs, diversity, age, sexual orientation, and geographic origin. Societal and personal biases and stereotypes; multicultural concepts and culturally appropriate counseling procedures.

**EPsy 8404. Group Counseling: Theory, Applications, and Skills.** (3 cr; A-F only. Prereq—Psy 5862 or MA or PhD student with CSPP subgroup or #) Theories, research, and procedures of group counseling and of groups such as psychoeducational groups. Applications to various settings and populations. Ethical issues in group work. Practice of group skills and techniques, including group participation and observation.


**EPsy 8411. Advanced Counseling Research.** (4 cr; A-F only, Prereq—Psy 5862 or MA or PhD student with CSPP subgroup or #) Focus on critically reviewing counseling research, qualitatively and quantitatively integrating research, and designing valid research.

**EPsy 8412. Seminar: Advanced Counseling Theory and Ethics.** (4 cr; A-F only. Prereq—Psy 5862 or PhD student with CSPP subgroup or #) Comparative analysis of theoretical models and methods used in contemporary counseling and psychotherapy; ethical standards and models of ethical decision making for professional roles.

**EPsy 8413. Personality Assessment of Adolescents and Adults.** (3 cr; A-F only. Prereq—[Psy 5604 or Psy 8111 or Psy 8112, ed psy grad student] or A-F Psychological assessment of adolescents/adults. Assessment interviews, MMPI-2, MMPI-A, DSM IV, written assessment reports.

**EPsy 8431. Master's Research Seminar: CSPP.** (4 cr; A-F only. Prereq—Psy 5862 or equiv, 5221 or equiv, ed psy MA student with CSPP subgroup or #) Survey of research methods, data-based decision making, basic research design skills, and research simulation.

**EPsy 8435. Organization of School Counseling Programs.** (3-6 cr; max 6 cr) Prereq—CSPP grad student in school counselor prog or #) Integrates learning from all courses in MA program with research in comprehensive guidance programming. Critiques of research, analyses of current trends/issues. Theories of management/organization in educational and other service settings. Literature review of comprehensive guidance programs. Students develop/demonstrate knowledge of comprehensive school counseling programming in K-12 school settings.


**EPsy 8444. FTE: Doctoral.** (1 cr; NGA. Prereq—Doctoral student, adviser and DGS consent)

**EPsy 8452. Psychological Aspects of Counseling Supervision.** (3 cr; Prereq—Ed psy PhD student with CSPP subgroup or #) Theories, review of relevant research, demonstration, and in-class practice of supervision skills.

**EPsy 8501. Counseling Pre-Practicum.** (3 cr; A-F only. Prereq—[CSPP or genetic counseling] grad student) Overview of basic helping skills through demonstration, in-class practice.

**EPsy 8502. Field Placement in Counseling and Student Personnel Psychology.** (2 cr; S-N only. Prereq—8501 or #) Students participate under supervision in practitioner activities within a counseling work environment.

**EPsy 8503. Counseling Practicum I.** (1-4 cr; A-F only. Prereq—8502 or #) Beginning-level supervised practice in counseling with individuals and groups; emphasizes systematic evaluation of student’s counseling practice through direct observations, video, and audio tapes.

**EPsy 8504. Counseling Practicum II.** (1-4 cr; A-F only. Prereq—8503 or #) Intermediate supervised practice in counseling with individuals and groups; emphasizes ethical issues with systematic evaluation of student’s practice through direct observations, video, and audio tapes.

**EPsy 8509. Supervision Practicum: CSPP.** (2 cr; Prereq—Ed psy PhD student with CSPP subgroup or #) Students involved in counseling supervision of beginning courses.

**EPsy 8512. Internship: CSPP.** (1-6 cr; max 12 cr; A-F only. Prereq—psy MA or PhD student with CSPP subgroup) Supervised internship in counseling, counseling psychology, or student personnel psychology at sites approved by CSPP program.

**EPsy 8513. University Counseling Practicum I.** (1-4 cr; S-N only. Prereq—Psy MA or PhD student with CSPP subgroup or #) Integrates science of counseling psychology with supervised practice in University Counseling and Consulting Services with career, academic, and personal clients.

**EPsy 8514. University Counseling Practicum II.** (1 cr; S-N only. Prereq—8513 or #) Integrates science of counseling psychology with supervised practice in University Counseling and Consulting Services with career, academic, and personal clients.

**EPsy 8521. Practicum in Student Affairs and Student Development.** (1-4 cr; max 6 cr) A-F only. Prereq—Ed psy MA or PhD student with CSPP subgroup or #) Supervised practice in university and college student development offices.
Courses

EPsy 8522. Counseling Practicum: Advanced. (3 cr. [max 9 cr.] Prereq—Grad ed psy major with CSPP subprog or #) Advanced skills practicum in counseling, counseling psychology, or student development.

EPsy 8600. Special Topics: Special Education Issues. (1-3 cr. [max 9 cr]) Current trends (e.g., school-wide discipline, models of collaboration, and diversity) investigated by formulating research projects. Students write a media piece describing an issue and its impact on the community.

EPsy 8612. Seminar: Students With Academic Difficulties. (3 cr; A-F only) Survey, analysis, and application of relevant theories and research related to current issues. Students in course develop skills in scholarly inquiry, writing, and debate.

EPsy 8621. Seminar on Intellectual Impairments. (3 cr. Prereq—Grad students interested in mental retardation and related intellectual impairments) Review of research and theories in context of relevant developmental theories; important contributions in primary sources concerning principles of cognition and behavior and applied problems. Procedures for deriving appropriate field applications; generalizing and implementing research questions.


EPsy 8666. Doctoral Pre-Thesis Credits. (1-18 cr. [max 60 cr.] NGA. Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral) Required for students with a family/life span focus on social development, behavioral interaction, and cultural interactions.

EPsy 8670. Seminar. (3 cr; A-F only) Research findings from diverse disciplines on impact of health and values on abilities to acquire and/or access information.

EPsy 8694. Research in Special Education. (3 cr) Design and implementation of research related to the unique developmental characteristics of exceptional learners.

EPsy 8701. Doctoral Core Seminar: Special Education I. (3 cr [max 6 cr]; A-F only. Prereq—Ed psy PhD student with spec ed subprog) Required for students with a family/life span focus on special education, behavioral interaction, and cultural interactions.

EPsy 8702. Doctoral Core Seminar: Special Education II. (3 cr [max 6 cr]; A-F only. Prereq—8701 or #) Required for students focusing on communication/ language/academics.

EPsy 8706. Single Case Designs in Intervention Research. (3 cr) Design and analysis of single-case experiments to examine effects of interventions on individual behavior in school, home, and community.

EPsy 8772. Seminar in Early Intervention. (2 cr) Explores research from diverse disciplines related to education of infants, toddlers, and preschool children with disabilities and their families. Discusses practical application of this research.

EPsy 8777. Thesis Credits: Master’s. (1-18 cr. [max 50 cr.] NGA. Prereq—Max 18 cr per semester or summer; 10 cr required (Plan A only))

EPsy 8800. Special Topics in School Psychology. (1-4 cr. [max 9 cr]) Issues or related coursework in areas not normally available through regular curriculum offerings.


EPsy 8813. Assessment Practicum in School Psychology. (2 cr [max 4 cr]; A-F only. Prereq—8821, grad ed psy major with school psy subprog or #; 8811 or 8812) Students administer, score, and interpret standardized tests of intellectual, adaptive, and social-emotional assessment, and assess educational progress using both formal and informal instructional assessment strategies. All measures complement other facets of assessment presented in 8811 and 8812.


EPsy 8816. Individual Intervention and Consultation. (3 cr; A-F only) In-depth study/analysis of instructional interventions/procedures necessary to work with school personnel in developing school-wide, classroom, individual instructional interventions. Practice in developing/applying interventions with individual students.

EPsy 8818. Intervention Practicum in School Psychology. (1 cr [max 2 cr]; A-F only. Prereq—Grad ed psy major with school psy subprog; 8815 or 8816) Students design, implement, and evaluate interventions for individuals or groups of children and for system-level concerns under supervision of practicing school psychologists. Students observe school psychologists collaborate with educators and parents in intervention-related activities.


EPsy 8822. Seminar on Research in School Psychology. (1 cr [max 2 cr]; S-N only. Prereq—Grad ed psy major with school psy subprog or #) Integrative, developmental series of discussions and activities related to research in school psychology and related disciplines; assists students preparing written research and scholarly works. Students from other programs are welcome.

EPsy 8823. Ethics and Professional Standards in School Psychology. (2 cr; A-F only. Prereq—8821) Ethics, law, and current educational issues applied to study/practice of school psychology. Ethical principles, state/federal laws governing educational practices. How mandates are applied to work of school psychologists in general/special populations (e.g., special education, ESL, ethnic/racial minorities). Students apply learning as researchers and practicing school psychologists in schools.

EPsy 8831. Practicum: School Psychological Services. (1-3 cr. [max 6 cr.] Prereq—Grad ed psy major with school psy subprog) Field placements in schools. Experiences may include consultation, assessment, direct service to individuals or groups, and report writing. Supervised on-site as well as by University through required participation in seminar.


EPsy 8841. Practicum: Instruction and Supervision in School Psychology. (2 cr. [max 4 cr.]; A-F only. Prereq—Grad ed psy major with school psy subprog or #) Review of best practice literature and strategies for evaluating supervision skills. Students give lectures to and supervise school psychology students in order to learn firsthand the issues related to providing supervision and to understand responsibilities related to academic careers.

EPsy 8842. Internship: School Psychological Services. (1-10 cr. [max 10 cr.]; S-N only. Prereq—Grad ed psy major with school psy subprog, #) Advanced field placement. Full-time supervised experience for one year or part-time for no more than two years.

EPsy 8888. Thesis Credits: Doctoral. (1-24 cr. [max 100 cr.]; NGA. Prereq—Max 18 cr per semester or summer; 24 cr required)

EPsy 8905. History and Systems of Psychology: Landmark Issues in Educational Psychology. (3 cr. Prereq—Ed psy PhD student) Critical issues in learning and cognition, statistics and measurement, counseling, school psychology, social psychology of education, and special education.

EPsy 8993. Directed Study: Educational Psychology. (1-10 cr. [max 20 cr.]; A-F only. Prereq—#) Arranged independently with individual faculty members.

EPsy 8994. Research Problems: Educational Psychology. (1-6 cr. [max 18 cr.]; A-F only. Prereq—#) Students participate in formulating/executing research proposal.

Electrical Engineering (EE)

Department of Electrical and Computer Engineering

Institute of Technology

EE 5121. Transistor Device Modeling for Circuit Simulation. (3 cr. Prereq—3115, 3161) or #) Basics of MOS, bipolar theory. Evolution of popular device models from early SPICE models to current industry standards.


EE 5164. Semiconductor Properties and Devices II. (3 cr. Prereq—5163 or #) Principles and properties of semiconductor devices. Charge control in different FETs, transport, modeling. Bipolar transistor models (Ebers-Moll, Gummel-Poon), heterostructure bipolar transistors. Special devices.
**EE 5171. Microelectronic Fabrication.** (4 cr. Prereq–IT grad or grad student) Fabrication of microelectronic devices; silicon integrated circuits, GaAs devices; lithography, oxidation, diffusion; process integration of various technologies, including CMOS, double poly bipolar, and GaAs MESFET.

**EE 5173. Basic Microelectronics Laboratory.** (1 cr. Prereq–5171 or §5171) Students fabricate a polysilicon gate, single-layer metal, NMOS chip, performing 80 percent of processing, including photolithography, diffusion, oxidation, and etching. In-process measurement results are compared with final electrical test results. Simple circuits are used to estimate technology performance.

**EE 5231. Linear Systems and Optimal Control.** (3 cr. Prereq–IT grad, 3015 or 3115 or §5231 or ¶5231 or #) Properties and modeling of linear systems; linear quadratic and linear-quadratic-Gaussian regulators; maximum principle.

**EE 5235. Robust Control System Design.** (3 cr. Prereq–IT grad 3015, 5231 or #) Development of control system design ideas; frequency response techniques in design of single-input/single-output (and MIMO) systems. Robust control and CAD tools.


**EE 5323. VLSI Design I.** (3 cr. Prereq–2301, 3115 or #) Combinational static CMOS circuits. Transmission gate networks. Clocking strategies, sequential circuits. CMOS process flows, design rules, structured layout techniques. Dynamic circuits, including Domino CMOS and DCVS. Performance analysis, design optimization, device sizing.

**EE 5324. VLSI Design II.** (3 cr. Prereq–5323 or #) CMOS arithmetic logic units, high-speed carry chains, fast CMOS multipliers. High-speed performance parallel shifters. CMOS memory cells, array structures, read/write circuits. Design for testability, including scan design and built-in self test. VSLI case studies.

**EE 5327. VLSI Design Laboratory.** (3 cr. Prereq–4301, 5323 or §5323 or ¶5323 or #) Complete design of an integrated circuit. Designs evaluated by computer simulation.


**EE 5333. Analog Integrated Circuit Design.** (3 cr. Prereq–3115, and student or grad student) Fundamental circuits for analog signal processing. Design issues associated with MOS/BJT devices. Design/testing of circuits. Selected topics (e.g., modeling of basic IC components, design of operational amplifier or comparator or analog sampled-data circuit filter).

**EE 5361. Computer Architecture and Machine Organization.** (3 cr. §5361 5201. Prereq–2301, 2361) Introduction to computer architecture. Aspects of computer systems, such as pipelining, memory hierarchy, and input/output systems. Performance metrics. Examination of each component of a complicated computer system.


**EE 5381. Telecommunications Networks.** (3 cr. Prereq–4521, 5331 or #) Fundamentals and concepts of modern telecommunications networks. Mathematical tools required for their performance analysis. Layered network architecture, point-to-point protocols/links, delay models, multiclass access, and communication resource management.

**EE 5391. Computing With Neural Networks.** (3 cr. Prereq–3025 or Stat 3091 or #) Neural networks as a computational model; connections to AI, statistics and model-based computation; associative memory and matrix computation; Hopfield networks; supervised networks for classification and prediction; unsupervised networks for data reduction; associative recognition and retrieval, time series prediction and knowledge extraction.

**EE 5501. Digital Communication.** (3 cr. Prereq–4501, 3025, or grad in IT major or #) Theory and techniques of modern digital communications. Communication limits; modulation and detection; fading channels with intersymbol interference; optimal and suboptimal sequence detection; equalization. Error correction coding; trellis-coded modulation; multiple access.


**EE 5545. Real-Time Digital Signal Processing Laboratory.** (2 cr. Prereq–4541) Lab. Real-time computation of digital signal processing (DSP) functions, including filtering, sample-rate change, and differential pulse code modulation; implementation on a current DSP chip. DSP chip architecture, assembly language, arithmetic; real-time processing issues; processor limitations; I/O handling.

**EE 5549. Digital Signal Processing Structures for VLSI.** (3 cr. Prereq–4545) Pipelining; parallel processing; fast convolution; FIR, rank-order, IIR, lattice, adaptive digital filters; scaling and roundoff noise; DCT; Viterbi coders; lossless coders, video compression; speech recognition.

**EE 5551. Multiscale and Multirate Signal Processing.** (3 cr. Prereq–4551, grad in IT major or #) Multirate discrete-time systems. Bases, frames; continuous wavelet transform; scaling equations; discrete wavelet transform; applications in signal and image processing.

**EE 5581. Information Theory and Coding.** (3 cr. Prereq–5531 or 4551 or #) Source and channel models, codes for sources and channels. Entropy, mutual information, capacity, rate-distortion functions. Coding theorems.

**EE 5585. Data Compression.** (3 cr. Prereq–IT Sr or grad or #) Source coding in digital communications and recording; codes for lossless compression; universal lossless codes; lossless image compression; scalar and vector quantizer design; loss source coding theory; differential coding, trellis codes, transform and subband coding; analysis/synthesis schemes.

**EE 5601. Introduction to RF/Microwave Engineering.** (3 cr. Prereq–4601, IT Sr or grad) Fundamentals of EM theory and transmission lines concepts. Transmission lines and network analysis. CAD tool. Lumped circuit component designs. Passive circuit components. Connectivity to central communication theme.

**EE 5602. RF/Microwave Circuit Design.** (3 cr. Prereq–5601 or equiv) Transmission lines, network analysis concepts. CAD tools for passive/active designs. Diode based circuit designs (detectors, frequency multipliers, mixers). Transistor based circuit design (amplifiers, oscillators, mixers/doubler).


**EE 5611. Plasma-Aided Manufacturing.** (4 cr. §5611. Prereq–Grad or upper div IT, ME 3321, ME 3322 or equiv) Manufacturing using plasma processes; plasma properties as a processing medium; plasma spraying, welding and microelectronics processing; process control and system design; industrial speakers; a cross-disciplinary experience between heat transfer design issues and manufacturing technology.

**EE 5613. RF/Microwave Circuit Design Laboratory.** (2 cr. Prereq–5601) Scattering parameters, planar lumped circuits, transmission lines, RF/microwave substrate materials, matching networks/tuning elements, resonators, filters, combiners/dividers, couplers. Integral lab.

**EE 5616. Antenna Theory and Design.** (3 cr. Prereq–5601 or concurrent registration in 5601) Antenna performance parameters, vector potential/radiation integral, wire antenna structures, broadband antenna structures, microstrip/aperture theory, antenna measurements.

**EE 5621. Physical Optics.** (3 cr. Prereq–3015 or #) Physical optics principles, including Fourier analysis of optical systems and images, scalar diffraction theory, interferometry, and coherence theory. Applications discussed include diffractive optical elements, holography, astronomical imaging, optical information processing, and microoptics.


**EE 5624. Optical Electronics.** (4 cr. Prereq–3601 or Phys 3002 or #) Fundamentals of lasers, including propagation of Gaussian beams, optical resonators, and theory of laser oscillation. Polarization optics, electro-optic, acousto-optic modulation, nonlinear optics, and phase conjugation.
Courses


EE 5632. Photonic Communication Devices and Systems. (3 cr. Prereq–5163 or 5624 or equiv or #) Primary solid-state components using optical communication systems. Semiconductor lasers, detectors, and optical fibers. Basic optoelectronic properties of III-V semiconductors; band structure, optical transitions, heterostructures. LEDs, semiconductor lasers, detectors. Optical network components/systems: fibers, amplifiers, power, system architectures.

EE 5653. Physical Principles of Magnetic Materials. (3 cr. Prereq–IT-grad or #) Physics of diamagnetism, paramagnetism, ferromagnetism, antiferromagnetism, ferrimagnetism; ferromagnetic phenomena; static and dynamic theory of micromagnetics, magneto-optics, and magnetization dynamics; magnetic material applications.

EE 5655. Magnetic Recording. (3 cr. Prereq–IT grad or #) Magnetic fundamentals, recording materials, idealized models of magnetic records/reproduction, analytic models of magnetic record heads, sinusoidal magnetic recording, digital magnetic recording, magnetic recording heads/media, digital recording systems.


EE 5721. Power Generation Operation and Control. (3 cr. Prereq–4721) Engineering aspects of power system operation; economic analysis of generation plants and scheduling to minimize total cost of operation; scheduling of hydro resources and thermal plants with limited fuel supplies; load analysis and secure operation; state estimation and optimal power flow; power system organizations.

EE 5725. Power Systems Engineering. (3 cr. Prereq–4721) Reliability analysis of large power generation and transmission systems; writing programs for steady-state analysis and Monte Carlo analysis; power system protection systems, circuit current calculations, short circuit detection, isolating faulted components; characteristics of protection components.
EE 8444. FTE: Doctoral. (1 cr; NGA, Prereq—Doctoral student, adviser and DGS consent)
EE 8500. Seminar: Communications. (1 cr; max 3 cr; S-N only)
Current literature, individual assignments.
EE 8541. Image Processing and Applications. (3 cr; Prereq—4541, 5581 or #)
Two-dimensional digital filtering and transforms; application to image enhancement, restoration, compression, and segmentation.
EE 8581. Detection and Estimation Theory. (3 cr; Prereq—5531 or #)
Risk theory approach to detection and estimation, random process representation, signal parameter estimation. Waveform estimation; detection of phase, frequency, and delay in signals. Applications to communications and radar-sonar signal design and processing.
EE 8591. Predictive Learning from Data. (3 cr; Prereq—IT grad student or #)
Basic elements and application areas of artificial intelligence (AI) related to design and implementation of expert systems (ES). Knowledge representation, reasoning under uncertainty. ES and their environment, planning, natural language processing (NLP), intelligent computer-aided instruction (ICAI), and AI tools (software and hardware).
EE 8601. Advanced Electromagnetic Theory. (3 cr; A-F only, Prereq—4601 or equiv)
Aspects of electromagnetic theory. Review of introductory material. Scattering theory, geometric theory of diffraction, integral equation methods, Green’s functions.
EE 8610. Seminar: Electronics, Fields, and Photonics. (1 cr; max 3 cr; S-N only, Prereq—EE grad major or #)
Students are assigned readings from current literature and make individual presentations to class. From time to time outside speakers present research papers.
EE 8611. Plasma Physics. (3 cr; Prereq—#)
Plasma theory and charged particle transport phenomena; collision processes, orbit theory, kinetic theory, Boltzmann transport equation, moment (continuity) equations, magnetohydrodynamics, transport properties. Applications of plasma theory to modeling of, dc, rf, and microwave discharges.
EE 8660. Seminar: Mathematics. (1 cr; max 3 cr; S-N only)
Current literature, individual assignments.
EE 8666. Doctoral Pre-Thesis Credits. (1-16 cr [max 60 cr]; NGA, Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)
EE 8725. Advanced Power System Analysis and Economics. (3 cr; Prereq—4725, IT grad student or #)
Solving sets of equations that involve large sparse matrices. Sparse matrix storage, ordering schemes, application to power flow, short circuit calculation, optimal power flow, and state estimation.
EE 8741. Power Electronics in Power Systems. (3 cr; Prereq—4741, IT grad student or #)
Impact of power electronics loads on power quality. Passive and active filters. Active input current waveform shaping. HVDC transmission. Static VAR control, energy storage systems. Interconnecting photovoltaic and wind generators. Static phase shifters and circuit breakers for flexible AC transmission (FACTS).
EE 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA, Prereq—Max 18 cr per semester or summer; 10 cr total required. [Plan A only])
EE 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA, Prereq—Max 18 cr per semester or summer; 24 cr required)
EE 8940. Special Investigations. (1-3 cr; Prereq—1-3 cr may be repeated for cr; IT grad student or #)
Studies of approved theoretical or experimental topics.
EE 8950. Advanced Topics in Electrical and Computer Engineering. (1-3 cr [max 12 cr]; Prereq—Cr or may be repeated for cr; #)
Topics vary according to needs and staff availability.
EE 8961. Plan B Project I. (3 cr; Prereq—Grad EE or CompT major)
Project topic(s) arranged between student and adviser. Written report(s).
EE 8963. Plan B Project II. (1-2 cr. Prereq—EE grad student; may be taken to satisfy requirement for Plan B master’s degree, may appear on master’s program but may not be applied toward minimum cr in major field, no cr toward PhD)
Project topic(s) arranged between student and adviser. Written report(s).
EE 8970. Graduate Seminar I. (1 cr; max 3 cr; S-N only, Prereq—Grad student)
Recent developments in electrical engineering, related disciplines.
EE 8980. Graduate Seminar II. (1 cr; max 3 cr; S-N only)
Recent developments in electrical engineering, related disciplines.

English: Creative and Professional Writing (EngW)

Department of English Language and Literature
College of Liberal Arts

EngW 5102. Advanced Fiction Writing. (4 cr [max 8 cr]; Prereq—#)
Advanced workshop for graduate students with considerable experience in writing fiction.
EngW 5103. Advanced Fiction Writing. (4 cr [max 8 cr]; Prereq—#)
Advanced workshop for students with considerable experience in writing fiction.
EngW 5104. Advanced Poetry Writing. (4 cr [max 8 cr]; Prereq—#)
Advanced workshop for graduate students with considerable experience in writing poetry. An opportunity to explore new poetic possibilities and to read widely in contemporary poetry and poetics.
EngW 5105. Advanced Poetry Writing. (4 cr [max 8 cr]; Prereq—#)
Advanced workshop for students with considerable experience in writing poetry. An opportunity to explore new poetic possibilities and to read widely in contemporary poetry and poetics.
EngW 5106. Advanced Literary Nonfiction Writing. (4 cr [max 8 cr]; Prereq—#)
Projects in writing poetry, fiction, drama, and nonfiction, or study of ways to improve writing.
EngW 5108. Reading Across Genres. (4 cr [max 5 cr]; Prereq—Creative writing MFA student, #)
Contemporary writing in fiction, poetry, and creative nonfiction. Primarily a reading course rather than a writing course.
EngW 5110. Seminar: Writing of Fiction. (4 cr [max 16 cr]; Prereq—#)
Focuses on full-length book (e.g., novel, short story collection). Assignments in common. Individual project.
EngW 5120. Seminar: Writing of Poetry. (4 cr [max 8 cr]; Prereq—#)
Focuses on exploration and practice of various styles. Assignments in common and individual project.
EngW 5130. Seminar: Writing of Literary Nonfiction. (4 cr [max 8 cr]; Prereq—#)
Advanced workshop. Assignments in common and individual projects.
EngW 5140. Fiction: Manuscript Preparation. (4 cr; Prereq—Grad writing MFA student, #)
For students working on their creative project.
EngW 5150. Poetry: Manuscript Preparation. (4 cr [max 8 cr]; Prereq—#)
For students working on their creative project.
EngW 5160. Literary Nonfiction: Manuscript Preparation. (4 cr [max 8 cr]; Prereq—#)
For students working on their creative project.
Courses

EngW 8170. Mixed Genre: Manuscript Preparation. (4 cr [max 6 cr]. Prereq—EngW 8130, creative writing MFA student or #) Students work on their creative project.

EngW 8310. Topics in Creative Writing. (4 cr [max 8 cr]. Prereq—EngW 8170 or creative writing grad major or #) Special topics in fiction, literary nonfiction, poetry. Topics specified in Class Schedule.

EngW 8333. FTE—Master's. (1 cr; NGA. Prereq—Master's student, adviser and DGS consent)

EngW 8990. MFA Creative Thesis. (2-8 cr [max 48 cr]. Prereq—EngW 8140, EngW 8150, EngW 8160, creative writing MFA student or #) For students working on their creative project.

English: Literature (EngL)
Department of English Language and Literature

College of Liberal Arts

EngL 5001. Introduction to Methods in Literary Studies. (3 cr. Prereq—Grad or #) Ends/methods of literary research, including professional literary criticism, analytical bibliography, and textual criticism.

EngL 5002. Introduction to Literary and Cultural Theory. (3 cr. Prereq—Grad or #) Approaches to practical/theoretical problems of literary history/genre.

EngL 5030. Readings in Drama. (3 cr [max 9 cr]. §5330. Prereq—Grad student or #) Wide reading in literature of a given period or subject. Prepares students for work in other courses/seminars. Relevant scholarship/criticism. Topics specified in Class Schedule.

EngL 5090. Readings in Special Subjects. (3-4 cr [max 9 cr]. §5100. Prereq—Grad student or #) General background preparation for advanced study. Diverse selection of literatures written in English, usually bridging national cultures and time periods. Readings specified in Class Schedule.

EngL 5100. Readings in Special Subjects. (3-4 cr [max 9 cr]. §5100. Prereq—Grad student or #) General background preparation for advanced study. Diverse selection of literatures written in English, usually bridging national cultures and time periods. Readings specified in Class Schedule.

EngL 5110. Readings in Middle English Literature and Culture. (3 cr [max 9 cr]. §5210. Prereq—Grad student or #) Wide reading in literature of period. Relevant scholarship/criticism. Topics vary. See Class Schedule.

EngL 5121. Readings in Early Modern Literature and Culture. (3 cr [max 9 cr]. §5220. Prereq—Grad student or #) Topical readings in early modern poetry, prose, fiction, and drama. Attention to relevant scholarship or criticism. Preparation for work in other courses or seminars.


EngL 5151. Readings in 19th-Century Literature and Culture. (3 cr [max 9 cr]. §5250. Prereq—Grad student or #) Topics may include British Romantic or Victorian literatures, American literature, important writers from a particular literary school, a genre (e.g., the novel). Readings.

EngL 5170. Readings in 20th-Century Literature and Culture. (3 cr [max 9 cr]. §5270. Prereq—Grad student or #) British, Irish, or American literatures, or topics involving literatures of two nations. Focuses either on a few important writers from a particular literary period or on a genre (e.g., drama). Topics specified in Class Schedule.


EngL 5200. Readings in American Literature. (3 cr [max 9 cr]. §5120. Prereq—Grad student or #) General background/preparation for advanced graduate study. Readings cover either a wide historical range (e.g., 19th century), a genre (e.g., the novel), or a major literary movement (e.g., Modernism).


EngL 5593. The Afro-American Novel. (3 cr [max 9 cr]. §5693. Prereq—Grad student or #) Contextual readings of 19th-/20th-century black novelists, including Chesnutt, Hurston, Wright, Baldwin, Petry, Morrison, and Reed.

EngL 5597. Harlem Renaissance. (3 cr. Prereq—EngL 5595. Multidisciplinary review of Jazz Age’s Harlem Renaissance: literature, popular culture, visual arts, political journalism, major black/white figures.

EngL 5602. Gender and the English Language. (3 cr. Prereq—Grad student or #) Introduction to features of English that are gender-marked or gender-biased. Connections between language theory and social structures, including class and ethnicity. Patterns of women’s/men’s speech in specific social contexts. Gender and writing.

EngL 5603. World Englishes. (3 cr. Prereq—Grad student or #) Historical background, psychosocial significance, and linguistic diversity/varieties of English spoken around world, especially in postcolonial contexts (Caribbean, Africa, Asia). Development of local standards/vernaculars. Sociolinguistic methods of analysis.

EngL 5605. Social Variation in American English. (3 cr. Prereq—Grad student or #) Description/analysis of English language variation from sociolinguistic perspective in the United States and the Caribbean. Social history of voluntary/enforced migrations leading to development of regional/rural dialects, pidgins, creoles, and urban varieties.


EngL 5690. Minnesota Writing Project—Directed Workshops. (1-3 cr [max 30 cr]. §5690) Workshops. Theories of writing and writing pedagogy. Writing for publication. Research topics in applied literacy.

EngL 5711. Introduction to Editing. (4 cr. §5711) Editor-writer relationship, manuscript reading, author querying, rewriting, style. Some discussion of copy editing. Students develop editing skills by working on varied writing samples.


EngL 5742. Theories of Writing and Instruction. (3 cr. §5742. Prereq—Grad student or #) Introduction to major theories that inform teaching of writing in college and university-level high school curriculums. Topics specified in Class Schedule.

EngL 5743. History of Rhetoric and Writing. (3 cr. §5743. Prereq—Grad student or #) Assumptions of classical/contemporary rhetorical theory, especially as they influence interdisciplinary field of composition studies.

EngL 5790. Topics in Rhetoric, Composition, and Language. (3 cr. §5790. Prereq—Grad student or #) Topics specified in Class Schedule.


EngL 5992. Directed Readings, Study, or Research. (1-15 cr [max 15 cr]. Prereq—EngL or #)

EngL 8110. Seminar in Medieval Literature and Culture. (3 cr [max 12 cr]) Sample topics: Chaucer, “Piers Plowman”; Middle English literature, 1300-1475; medieval literary theory; literature/class in 14th-century; texts/heresies in late Middle Ages.

EngL 8120. Seminar in Early Modern Literature and Culture. (3 cr [max 12 cr]) A-F only. Prereq—EngL major or grad student or #) British writers/topics, from Reformation to French Revolution. In first half of period (which divides at 1640), a typical topic is Spenser and epic tradition; in second half, women historians before Wollstonecraft.

EngL 8150. Seminar in Shakespeare. (3 cr [max 9 cr]. Prereq—EngL major or grad student or #) Perspectives/works vary with offering and instructor’s emphases. Characteristically on text, performance, interpretation, criticism, feminism, intellectual history. Recent topics: Shakespeare at comedy, “Elegy by W.S.” (Is it Shakespeare’s?). Roman political tragedies. Topics specified in Class Schedule.

EngL 8180. Seminar in 20th-Century British Literature and Culture. (3 cr. [max 12 cr]; A-F only. Prereq—Grad student or #) Sample topics: modernism, Bloomsbury Group, working-class/migrant literature. Topics specified in Class Schedule.

EngL 8190. Seminar in 20th-Century Anglophone Literatures and Cultures. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Topics in Anglophone literatures of Canada, Africa, the Caribbean, India and Pakistan, and the Pacific. Sample topics: Stuart Hall and Black Britain; Salman Rushdie and cosmopolitan literatures; national literatures and partitioned states. Topics specified in Class Schedule.


EngL 8290. Figures, Themes, and Styles in American Literature. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Sample topics: Dickinson, 19th-century imperialism, Faulkner, San Francisco poets, humor, Chaplin, Hitchcock, and popular culture. Topics specified in Class Schedule.

EngL 8300. Seminar in American Minority Literature. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Sample topics: Harlem Renaissance, ethnic autobiographies, Black Arts movement. Topics specified in Class Schedule.

EngL 8333. FTE: Master’s. (1 cr; NG; Prereq—Master’s student, adviser and DGS consent)

EngL 8400. Seminar in Post-Colonial Literature, Culture, and Theory. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Sample topics: Marxism and nationalism; modern India; feminism and decolonization; “the Empire Writes Back”; Islam and the West. Topics specified in Class Schedule.

EngL 8444. FTE: Doctoral. (1 cr; NG; Prereq—Doctoral student, adviser and DGS consent)

EngL 8510. Seminar in Criticism and Theory. (3 cr [max 12 cr]; Prereq—Grad student in English or #) Sample topics: Marxism and nationalism; modern India; feminism and decolonization; “the Empire Writes Back”; Islam and the West. Topics specified in Class Schedule.

EngL 8520. Seminar in Cultural Theory and Practice. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Content varies, might focus on a body of theory/use. Sample topics: semiotics applied to perspective paintings, numbers, and money; analysis of a particular set of cultural practices by applying various theories to them.

EngL 8530. Seminar in Feminist Criticism. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Brief history of feminist criticism, in-depth treatment of contemporary perspectives/issues. Topics specified in Class Schedule.

EngL 8600. Seminar in Language, Rhetoric, Literacy, and Composition. (3 cr [max 9 cr]; Prereq—Grad student) Students read/conduct research on theories/literature relevant to cross-disciplinary fields committed to writing and to teaching writing.

EngL 8610. Seminar in Language and Discourse Studies. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Current theoretical/methodological issues in discourse analysis. Social/psychological determinants of language choice (class, ethnicity, gender) in various English-speaking societies. Application to case studies, review of scholarship.


EngL 8625. Dissertation Seminar. (3 cr. Prereq—[PhD student, passed prelim exams] or #) Bridges gap between taking coursework for preliminary examination and writing the dissertation. Conceptualizing the dissertation (using model of Graduate School doctoral Dissertation Fellowship application). Producing a draft of a chapter. Students work with faculty mentors (e.g., advisers, members of their committees) and peer writing groups to develop research/writing strategies.

EngL 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NG; Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

EngL 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NG; Prereq—Max 18 cr per semester or summer; 24 cr required)

EngL 8910. Seminar in Special Subjects. (3 cr [max 12 cr]; Prereq—Grad student in Eng or #) Sample topics: literature of World War II, writings of the Holocaust, literature of English Civil War, advanced verification.

EngL 8992. Directed Reading in Language, Literature, Culture, Rhetoric, Composition, or Creative Writing. (1-9 cr [max 15 cr]; Prereq—#)

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English: Writing, Rhetoric, and Language (EngC)

Department of English Language and Literature

College of Liberal Arts

EngC 5051. Graduate Research Writing Practice for Non-Native Speakers of English. (3 cr. Prereq—Grad student) Graduate-level writing techniques/formats for summaries, critiques, research, and abstracts. Persuasion, documentation, grammar, vocabulary, field-specific requirements. Writing through several drafts, using mentor in specific field of study. Revising/editing to meet graduate standards. Discussions.

EngC 5052. Graduate Research Presentations and Conference Writing for Non-Native Speakers of English. (3 cr. Prereq—[5051, grad student, non-native speaker of English] or #) Practice in writing/presenting graduate-level research for conferences or professional seminars. Delivery of professional academic presentations to U.S. audiences. Conference abstract, paper, and poster presentation. Communication in research process. Students select topics from their own research/studies. Format, style, transitions, topic narrowing, non-verbal presentation skills.

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Entomology (Ent)

Department of Entomology

College of Agricultural, Food and Environmental Sciences

Ent 5011. Insect Structure and Function. (4 cr; A-F only. Prereq—3001 or equiv) Comparative study of insect structures/functions from evolutionary perspective. Introduction to physiology of digestion, respiration, other organ systems.

Ent 5021. Insect Taxonomy and Phylogeny. (4 cr. Prereq—3001 or equiv) Identification of families of adult insects; evolution and classification of insects; techniques of collecting and curating insects; principles of phylogeny reconstruction.

Ent 5031. Insect Physiology. (2 cr; A-F only. Prereq—5011, biomath course or #) Essential processes of insects. Nerve and muscle mechanisms, energy metabolism, respiration, nutrition and digestion, excretion, regulation and interactions of processes, sensory mechanisms, and behavior. Reproductive behavior, embryology, and postembryonic development of insects.

Ent 5041. Insect Ecology. (3 cr. Prereq—Biol 5041 or EBB 5122 or #; offered fall 1998 and alt yrs) Synthetic analysis of the causes of insect diversity and of fluctuations in insect abundance. Focus on abiotic, biotic, and evolutionary mechanisms influencing insect populations and communities.


Ent 5211. Insect Pest Management. (3 cr. Prereq—3005 or #) Prevention or suppression of injurious insects by integrating multiple control tactics, e.g., chemical, biological, cultural. Strategies to optimize the dynamic integration of control methodologies in context of their economic, environmental, and social consequences.

Ent 5241. Ecological Risk Assessment. (3 cr; Prereq—#) Evaluating current/potential impact of physical, chemical, 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.

Ent 5275. Medical Entomology. (3 cr. Prereq—3005 or #; offered 1998 and alt yrs) Biology of arthropod vectors of human disease. Emphasis on disease transmission and host, vector, and pathogen interactions.

Ent 5311. Sampling Biological Populations. (3 cr; Prereq—Stat 5021 or equiv) Sampling plans for study of field/lab populations. Statistical distributions/techniques for detecting/coping with aggregation. Randomization, required sample size, optimal allocation, probability design. Sequential plans for making decisions.

Ent 5321. Ecology of Agricultural Systems. (3 cr; A-F only. Prereq—Agr 5321. Prereq—[3xxx or above] course in [Agro or AgSc] or Hort, [3xxx or above] course in [Ent or PlPa or Soil] or #) Ecological approach to problems in agricultural systems. Formal methodologies of systems inquiry are developed/applied.

Ent 5341. Biological Control of Insects and Weeds. (3 cr; A-F only. Prereq—5011, Biol 1009, EEB 1001 or grad) Biological control of arthropod pests and weeds. Analysis of relevant ecological theory and case studies; biological control agents. Lab includes natural enemy identification, short experiments, and computer exercises.


Ent 5361. Aquatic Insects. (4 cr [max 8 cr]; A-F only. Prereq—#) Taxonomy, natural history of aquatic insects including their importance in aquatic ecology, water resource management, recreation, and conservation.
Courses

Emphasizes family-level identification of immature/adults. Field trips scheduled to local aquatic habitats. A collection is required.

Ent 5371. Principles of Systematics. (3 cr. Prereq–#; offered alt yrs) Theoretical/practical procedures of biological systematics. Phylogeny reconstruction, including computer assisted analyses, morphological/molecular approaches, species concepts, speciation, comparative methods, classification, historical biogeography, nomenclature. Use/value of museums.

Ent 5381. Lepidopterology. (2-3 cr. Prereq–Ent course or #; one course each in ecology and genetics recommended) Overview of Lepidoptera with emphasis on processes and phenomena such as polymorphism, mimicry, and individual quality that are well demonstrated by this insect order.

Ent 5481. Invertebrate Neurobiology. (2-3 cr. 5N5c 5481) Fundamental principles/concepts underlying cellular bases of behavior/systems neuroscience. Particular invertebrate preparations.

Ent 5900. Basic Entomology. (1-6 cr. Prereq–#) For graduate students who need to make up certain deficiencies in their biological science background.

Ent 5910. Special Problems in Entomology. (1-6 cr. Prereq–#) Individual field, lab, or library studies in various aspects of entomology.

Ent 5920. Special Lectures in Entomology. (1-3 cr.) Lectures or labs in special fields of entomological research. Given by visiting scholar or regular staff member.


Ent 8051. Toxicology. (2 cr. Prereq–[5011, organic, inorganic] chem courses, biochem course or #) Chemistry, mode of action of conventional insecticides. Insect growth regulators, microbial pesticides. Transgenic viruses, genetically modified plants. Offered alternate years.

Ent 8200. Colloquium in Social Insects. (1-3 cr. Prereq–Ent course or #) Current research on bees, wasps, ants, and termites. Student critiques and research reports.

Ent 8210. Colloquium in Insect Evolution. (1-3 cr. Prereq–#371 or #) Research issues in systematics and evolution. Comparative biology, biogeography, and molecular evolution. Students may re-enroll as topics alternate. Students critique papers from primary literature.

Ent 8240. Colloquium in Insect Ecology. (1-2 cr. Prereq–#5011 or #) Advanced topics.

Ent 8300. Graduate Seminar. (1 cr; 5N5 only. Prereq–#) Oral and written reports on and discussion by students of selected topics from current literature.

Ent 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

Ent 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

Ent 8594. Research in Entomology. (1-16 cr [max 36]; 5N only) Directed research.

Ent 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Ent 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

Ent 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Entrepreneurship (Entr)

For courses in this designator, see the online course database at <www.semesters.umn.edu/cr>.

Environmental Science (ES)

Courses

Department of Soil, Water, and Climate

College of Agricultural, Food and Environmental Sciences

ES 5211. Environmental Biophysics and Ecology. (2 cr; A-F 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.


ES 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.

ES 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.

ES 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. Discusses applications to climate, meteorology, the hydrologic cycle, air quality, and biogeochemical cycles.

ES 5555. Wetland Soils. (2-3 cr; A-F only. Prereq–1201 or 2125 or equiv or #; 4511 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 hydrologic soil delineation project.


Experimental and Clinical Pharmacology (ECP)

College of Pharmacy

ECP 5610. Pharmacoepidemiology. (2 cr. Prereq–[PubH 5320, PubH 5330] or #) Application of epidemiologic principles to study, use, and beneficial/adverse outcomes of drugs in human populations.

ECP 8100. Seminar. (1 cr [max 8 cr]. Prereq–SACP grad major in ECP track or #) Selected topics in experimental and clinical pharmacology.

ECP 8200. Research Problems. (1-8 cr [max 16 cr]. Prereq–Grad SACP major [ECP Track] or #) Individually designed research experience directed at contemporary problems related to drug use.

ECP 8210. Clinical Therapeutics. (3 cr. Prereq–SACP grad major in ECP track or #) Topics in clinical pharmacology that illustrate continuum of pathophysiology of a disease state, its contemporary treatment, problems or controversial issues with treatment approaches, strategies to advance therapy. Lectures, readings.


ECP 8290. Clinical Clerkship. (2 cr. Prereq–Grad SACP major in ECP track or #) Supervised study of pharmaceutical services at Fairview-University Medical Center or affiliated institutions.

ECP 8400. Pharmacometrics. (3 cr. Prereq–SACP grad major in ECP track or #) Theory/application of contemporary methods for analysis of concentration-time data and exposure-response relationships.

ECP 8410. Population Pharmacokinetic Modeling. (2 cr; A-F only) Theoretical background for using mixed effects model in population analysis. Building fixed/random effects into a pharmaco-statistical model. Project allows students to become familiar with a contemporary population pharmacokinetic analysis program.

ECP 8420. Clinical Trial Simulation. (2 cr. Prereq–SACP grad major in ECP track or #) Theory/application of contemporary methods of using simulations to design more efficient/informative clinical trials.

ECP 8900. Advanced Topics in Experimental and Clinical Pharmacology. (1-4 cr [max 8 cr]. Prereq–SACP grad major in ECP track or #) Topic varies depending on faculty teaching course.

ECP 8992. Directed Readings in Experimental and Clinical Pharmacology. (1-2 cr [max 4 cr])

ECP 8993. Directed Study in Experimental and Clinical Pharmacology. (1-4 cr [max 4 cr])

Family Education (FE)

Department of Work, Community, and Family Education

College of Education and Human Development

FE 5001. Family Education Perspectives. (3 cr; A-F only) Origins, evolution, and critique of alternative perspectives on family education. Implications for clients, programs, and educators.
Courses

### FE 5003. Contemporary Family Education. (3 cr; A-F only)
Transitions in family life examined, with emphasis on preparing educators and educational programs.

### FE 5200. Special Topics in Family Education. (1-4 cr [max 20 cr])
Topics either not covered in available courses or not covered in sufficient breadth/depth to meet student needs/interests. Topics vary.

### FE 5201. Family and Work Relationships. (3 cr; A-F only)
Examination of the interactions of work and family to prepare professionals for improving work and family relationships.

### FE 5202. Sexuality Education. (3 cr; A-F only)
Prereq—Human sexual behavior course, family ed course) Preparation to develop, deliver, and evaluate sexuality education. Strategies to help children and adults acquire information, form values, develop interpersonal skills, and exercise personal responsibility in the sexual dimensions of individual and family life.

### FE 5203. Family Communication Education. (3 cr; A-F only)
Knowledge and skills needed to develop, deliver, and evaluate educational programs about family communications. Examination of family communications principles and issues. Development of appropriate teaching methods and materials.

### FE 5301. Program Planning in Family Education. (3 cr; A-F only)
Exploration of curriculum research and theory; examination and critique of alternative perspectives and their concomitant implications for families; development and evaluation of family education curriculum and programs.

### FE 5302. Family Education Curriculum in Secondary Schools. (3 cr; A-F only. Prereq—STEPP student)
Examination, development, and implementation of family and consumer science curriculum in secondary schools. Emphasizes curricular perspectives from social reconstruction and cognitive processes.

### FE 5303. Instructional Strategies in Family Education. (3 cr; A-F only. Prereq—STEPP student)
Theory/research relevant to methods of teaching. Emphasizes methods that support families taking technical, communicative, and emancipatory action.

### FE 5698. Introduction to Parent Education: History and Philosophy. (1 cr; A-F only)
History, philosophy, and implementation of parent education programs.

### FE 5701. Practice of Parent Education I. (3 cr; A-F only)
Examination of parent education in community settings; consideration of parents as adult learners with diverse backgrounds; development of group facilitation skills; observation and interviewing in community settings; reflection on and critique of the practice of parent education.

### FE 5702. Practice of Parent Education II. (3 cr; A-F only. Prereq—5701 or ∆)
Development of curriculum for parent education; consideration of teaching groups and individuals; consideration of ethics in parent education; evaluation of parent education programs; development of curriculum and teaching portfolio; reflection on and critique of the practice of parent education.

### FE 5703. Advanced Practice of Parent Education. (3 cr. Prereq—5702 or ∆)
Developing perspectives of parent education. Emphasis on psycho-dynamic, conceptual-change approaches. Reflective and dialogic approaches for working with parents in understanding beliefs and examining their origins and consequences. Examination of issues related to diversity, self-awareness, ethics, and evaluation.

### FE 5712. Parent-Child Interactions. (3 cr; A-F only)
Preparation to assess/apply theories/practices for everyday parent child relationships.

### FE 5796. Parent Education Practicum. (1-4 cr [max 4 cr; Prereq—5702 or ∆)
Supervised parent education field assignments designed according to licensure requirements and individual student needs, interests, and prior competencies.

### FE 5993. Directed Study in Family Education. (1-3 cr; Prereq—9 cr; A-F only. Prereq—4)
Self-directed study in areas not covered by regular courses. Specific program of study is jointly determined by student and advising faculty member.

### FE 5996. Internship in Family Education. (1-6 cr [max 6 cr; Prereq—A)
Planned work experience focusing on educational competencies in family education settings. Nature and extent of responsibilities are defined by the position student assumes.

### FE 8900. Family Education Colloquium. (1-4 cr [max 4 cr]; S-N only. Prereq—A)
In-depth discussion about current issues not covered or covered as thoroughly in available courses. For family education graduate students, faculty, and community professionals.

### FE 8994. Directed Research in Family Education. (1-6 cr [max 6 cr]; A-F only. Prereq—Family ed student doing Plan B research, ∆)

### FE 5950. Clinical Issues in Human Sexuality. (2 cr. Prereq—Enrollment in health sci grad programs in CSPP, Psy, PubH, SW of FSoS or ∆)
Assessment and treatment techniques pertaining to common sexual problems.

### FE 5955. Directed Study. (1-10 cr. Prereq—Q; qualified students may arrange for work on a tutorial basis.)
Studies on special topics as arranged between student and faculty.

### FE 5960. Basic Research Methods in Family Practice. (3 cr. Prereq—4)

## Family Social Science (FSoS)

### Department of Family Social Science

#### College of Human Ecology

**FSoS 5101. Family Systems.** (3 cr. 5310. Prereq—Grad student)
Family systems and other family theories focusing on the dynamics and processes relevant to family life. Diversity issues related to gender, ethnicity, sexual orientation, and disability. Issues related to divorce, single parenthood, and remarriage are covered. Family strengths and family problems are integrated.

**FSoS 5150. Special Topics in Family Social Science.** (1-4 cr [max 12 cr]. Prereq—[Varies by topic], #)
Review of research/scholarly thought. Topics specified in Class Schedule.

**FSoS 5193. Directed Study in Family Social Science.** (1-6 cr [max 6 cr]. Prereq—FSoS or grad student in related field)

### FSoS 5426. Alcohol and Drugs: Families and Culture. (3 cr §3426)
Overview of psychology/sociology of drug use/abuse. Life-span, epidemiological, familial, cultural data regarding use. Fundamentals of licit/illicit drug use behavior. Gender, ethnicity, social class, sexuality, sexual orientation, disability.

### FSoS 5429. Counseling Skills Practicum I. (3 cr §3429)
Basic counseling skills. Counselor needs/motivations, non-verbal communication, basic/advanced empathy, identifying strengths, maintaining focus, challenging discrepancies, use of self. Emphasizes building from client strengths, learning through role-playing.

### FSoS 5431. Counseling Skills Practicum II. (3 cr §3431. Prereq—3429, 5429)

### FSoS 5432. Chemical Abuse and Families: an Overview. (3 cr §3432)
Relationships, family systems with particular application to families in which alcohol or drug use is a problem. Family types, family of origin, models of family therapy, family systems theory, alcoholism. Review of literature.

### FSoS 8001. Conceptual Frameworks in the Family. (3 cr; Prereq—Family course or #)
Advanced theoretical models about families, emphasizing sociocultural context.

### FSoS 8013. Qualitative Family Research Methods. (3 cr)
Approaches to qualitative family research evaluation. Phenomenological, feminist, grounded theory, content analytic, ethnographical, political, student evaluation. Theory, research examples, student projects.

### FSoS 8014. Quantitative Family Research Methods. (3 cr; Prereq—8001 or equiv, 2 stat courses or #)
Builds on basic understanding of quantitative research in behavioral sciences by focusing on special issues
Courses

associated with conducting research on the family as the unit of analysis. Proposal writing and analysis of secondary data.

FSoS 8031. Family of Origin. (3 cr; S-N only. Prereq—Preference given to marriage and family therapy students) In-depth study of each student’s family of origin in a group of other students and a clinical faculty therapy supervisor. (1 cr; max 3 cr; S-N only. Prereq—Grad FSoS major)

FSoS 8032. Theories of Marital and Family Therapy. (3 cr) General systems theory and cybernetics: influence of, application to family systems, historical roots, and theoretical and clinical models they have influenced. How change processes affect interactional patterns, information processing, family structure, family belief systems, and family life cycle transitions.

FSoS 8033. Clinical Issues in Marriage and Family Therapy. (3 cr; A-F only. Prereq—8032 or equiv) Family therapy assessment and treatment approaches to problems such as depression, alcoholism, and sexual abuse, and to challenges of varying family structures, such as single-parent and remarried families.

FSoS 8034. Marriage and Family Therapy Supervision. (3 cr; Prereq—FSoS 8032 or #) For marriage and family therapists who want to become supervisors, this course is designed to meet didactic and clinical course requirements for the Approved Supervisor designation as stipulated by the American Marriage and Family Therapy Association (AAMFT). Topics included are theories of supervision, structures for supervision, methods of supervision, the evaluation process, and legal/ethical issues. Also covered are the therapist-client-supervisor relationships, potential problems, and contextual issues.

FSoS 8035. Assessment of Couples and Families. (3 cr; A-F only. Prereq—8001 or equiv or #) Issues in research and clinical assessment. Assumptions and values underlying assessment approaches. Specific assessment techniques discussed, evaluated, and administered. Ethical, legal, and practical issues.

FSoS 8036. Couple and Family Therapy Research. (3 cr; A-F only. Prereq—8013, 8014) Strengths and limitations of current couple and family outcome research; methodological approaches, including qualitative and quantitative.

FSoS 8037. Ethical, Legal, and Professional Issues in Mental Health Practice: Issues with Couples and Families. (2-10 cr [max 10 cr]; A-F only. Prereq—8032, practicum or internship exper) or [grad student in cooperating practicum or internship program who has completed 1 course on therapy with children or couples, families, practicum or internship exper) or #) Boundaries and triangles, gender inequities, family law, confidentiality and reporting requirements, dual roles, client diversity, and value clashes.

FSoS 8039. Clinical Interventions for Couples. (3 cr; A-F only. Prereq—8032 or equiv or #) Interventions into problems faced by couples at various ages and stages of their relationship. Developing and implementing effective strategies for problem solving, relationship maintenance, and partner growth, including integration of sex therapy into ongoing couple therapy.

FSoS 8043. Family Therapy Development: A Systemic Perspective. (3 cr. Prereq—8001 or equiv or #, FSoS PhD student beyond 1st yr) Concepts and principles of systems and ecosystems and their applications in family science; emphasizes theoretical integration and development of research models with appropriate methodologies.

FSoS 8047. Integrative Research Seminar. (3 cr. Prereq—8001 or equiv, 8013 or equiv, 8014 or equiv) For advanced doctoral students primarily in family social science who are working on independent research projects. Giving and receiving of constructive criticism and support in integrating theories, methods, and applications in order to create a totality that is logically coherent and conceptually and methodologically sound.

FSoS 8101. Family Stress, Coping, and Adaptation. (3 cr. Prereq—8001 or equiv, research methods course) Helping families become more resilient to stress by decreasing vulnerability to crises and traumatic stress disorders. Students develop research or intervention proposal on family stress, coping, adaptation, crisis, trauma, or resilience.

FSoS 8102. Seminar in Gender Roles. (3 cr. Prereq—Two grad family courses or #) Theory and research on gender roles in families. Gender issues in roles of mothers, fathers, marital partners, and same-sex partners. Issues of race, ethnicity, and social class as they intersect with gender.

FSoS 8103. Family Decision Making. (3 cr. Prereq—Two grad family courses or #) Analysis and assessment of methodological and theoretical approaches to studying problem-solving and decision-making processes of individuals and family groups.

FSoS 8104. Family Policy Research. (3 cr. Prereq—4003 or equiv or #) Seminar identifies characteristics distinguishing family policy research from other family research; conceptual frameworks, methods, and roles family policy research can play in policy-making and knowledge-building processes.

FSoS 8105. Family Gerontology. (3 cr. Prereq—4154 or equiv or #) Integrates gerontology and family studies; new lines of inquiry, qualitative and quantitative, into aging families. Family gerontological research, family relationships, family and long-term care institutions, theoretical frameworks and research methods, and research and interventions.

FSoS 8106. Family Research from Economic Perspectives. (3 cr. Prereq—8013 or equiv, 8014 or equiv or #) Seminar integrates conceptual and methodological perspectives of family social science with economic approaches to studying families. Family investments in human and social capital. Diversities in families; interface of public policies and family economic well-being.

FSoS 8107. Family Values Research: Theories and Critical Methods. (3 cr. Prereq—8013 or equiv, 8014 or equiv or #; WCFE 8920 recommended) Interdisciplinary seminar on critical modes of inquiry in the family area that require designing studies using normative theories, examining values as units of observation, and solving practical problems by collaborative strategies designed to encourage change.

FSoS 8150. Topics in Family Social Science. (1-6 cr [max 6 cr]. Prereq—Graduate student or #) Special seminars on timely topics suited to the needs of students.

FSoS 8193. Directed Study in Family Social Science. (1-6 cr [max 6 cr]. Prereq—Graduate student or #) Under faculty supervision, students teach an undergraduate course in family social science for which they have appropriate academic preparation and professional experience.

FSoS 8275. Clinical Consultation with Couples and Families. (3 cr; S-N only. Prereq—FSoS 8001 or equiv) Supervised students serve as a consultation group working with community clinicians and their clients, utilizing a one-way window and observation room; opportunities for cotherapy.

FSoS 8295. Family Therapy Practicum. (1-12 cr [max 12 cr]; S-N only. Prereq—FSoS and family therapy student) Clinical placement doing marriage and family therapy in a community setting.

FSoS 8296. Family Therapy Internship. (1-21 cr [max 21 cr]; S-N only. Prereq—8295, marriage and family therapy student) Full-time clinical placement doing marriage and family therapy in a community setting.

FSoS 8297. Supervision of Supervision. (1-3 cr [max 12 cr]; S-N only. Prereq—FSoS and MFT student, #) Hands-on practicum to gain AAMFT-approved supervisor status.

FSoS 8333. FTE: Master’s. (1 cr; NGA. Prereq—Master’s student, adviser and DGS consent)

FSoS 8444. FTE: Doctoral. (1 cr; NGA. Prereq—Doctoral student, adviser and DGS consent)

FSoS 8550. Advanced Topics in Family Social Science. (1-6 cr [max 6 cr]. A-F only. Prereq—FSoS PhD student) Special seminars on topics suited to student needs.

FSoS 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

FSoS 8755. Master’s Paper; Plan B Project. (1-6 cr; S-N only. Prereq—FSoS MS student) Graduate faculty work with students on research for Plan B paper.

FSoS 8777. Thesis Credits: Masters’. (1-18 cr [max 50 cr]; NGA. Prereq—Max 18 cr per semester or summer; 10 cr total required [Plan A only])


FSoS 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq—Max 18 cr per semester or summer; 24 cr required)

Finance (Fina)

Department of Finance

Curtis L. Carlson School of Management

Fina 8801. Theory of Capital Markets. (4 cr. Prereq—Econ 8103, Econ 8102, business admin PhD student or #) Expected utility theory, discrete theory, continuous theory, theory of the term structure, measures of risk, portfolio choice, aggregation and separation, linear programming.

Fina 8811. Corporate Finance. (4 cr. Prereq—Econ 8103, Econ 8104, business admin PhD student or #) Theoretical and empirical works in five major areas of corporate finance: capital structure, payout policy, mergers and corporate control, capital acquisition process, and corporate risk management. Theoretical frameworks are used to understand empirical evidence.

Fina 8821. Empirical Methods in Finance. (4 cr. Prereq—8801, business admin PhD student or #) Introduction to commonly used econometric methods in the empirical financial markets area. Econometric tests of linear pricing models, tests of market efficiency, event studies.

Fina 8820. Teaching Family Courses in Higher Education II. (3 cr; S-N only. Prereq—8201 or equiv) Under faculty supervision, students teach an undergraduate course in family social science for which they have appropriate academic preparation and professional experience.
Courses

Food Science and Nutrition (FScN)

Department of Food Science and Nutrition
College of Agricultural, Food, and Environmental Sciences

FScN 5411. Food Biotechnology. (2 cr. Prereq—4121)
Genetic tools as applied to food biotechnology. Improvement of microbes used in food production by modern biotechnological approaches. Discuss need for stringent regulation of modern biotechnology as well as ethical and legal issues.

FScN 5421. Introduction to Food Law. (3 cr. Prereq—1102)
Analysis of the federal legal requirements affecting the production process, packaging, marketing, and distribution of food and food products using case law studies and regulatory history.

FScN 5431. Physiochemistry of Food. (2 cr. Prereq—4111)
Surface phenomena, colloidal interactions, liquid dispersions, gels, emulsions and foams, and functionality of food macromolecules in these systems.

FScN 5441. Introduction to New Product Development. (2 cr. Prereq—4111, 4331)
Interactive course that introduces students to the principles of new product development, from identification and testing of new product concepts, through prototype testing, to basic process design using examples from industry.

Introduction to various procedures for analysis of structure and organization in raw and processed food.

FScN 5461. Food Packaging. (2 cr. Prereq—1102, 3102, Phys 1102 or Phys 1302)
Materials, principles, and procedures of packaging as they apply to food products. Emphasis is on consumer products, but the principles also apply to bulk and institutional foods and ingredients.

FScN 5471. Advanced Food Chemistry. (3 cr. Prereq—4111)
Chemical reactions taking place in formation, stability, and degradation of important food constituents. Examples of reactions for major chemical changes occurring in food systems.

FScN 5481. Sensory Evaluation of Food Quality. (2 cr. A-F only. Prereq—3102, Stat 3101)

FScN 5511. Meat, Poultry, and Seafood Protein Processing. (2 cr. Prereq—1102, Chem 2302)
Industrial processing of meat, poultry, and seafood products with emphasis on protein systems: comminuted products, nutraceutical products, thermal processing optimization, pasteurization, least cost analysis, and color stability.

Origins, structure, biochemistry, and cellular properties of major cereal grains as they relate to primary processing (milling) and secondary processing (production of cereal products).

FScN 5621W. Nutrition and Metabolism. (4 cr. Prereq—4612, BioC 3021, Phl 3051)
Carbohydrate, lipid, and protein metabolism. Uses “systems” or “holistic” approach to emphasize how metabolic pathways interrelate.

FScN 5622. Vitamin and Mineral Biochemistry. (3 cr. Prereq—4612, BioC 3021, Phl 3051)
Nutritional, biochemical, and physiological aspects of vitamins/essential minerals in human/experimental-animal models.

Fina 8892. Independent Study in Finance. (1-8 cr [max 16 cr]. Prereq—Business admin PhD student or #)
Problems or developments of special interest to the student.

Fina 8894. Directed Research in Finance. (1-8 cr [max 16 cr]. Prereq—Business admin PhD student specializing in finance or #)
Individualized directed research on a project of interest to the student, approved and advised by faculty.

Fisheries and Wildlife (FW)

Department of Fisheries, Wildlife, and Conservation Biology
College of Natural Resources

FW 5003. Human Dimensions of Biological Conservation. (3 cr. Prereq—[Biol 1001 or Biol 1009], Biol 3407)
Survey of social, psychological, economic, policy aspects of managing/conserving wildlife, fisheries, and related resources.

FW 5051. Analysis of Populations. (3-4 cr. Prereq—[Biol 1001 or Biol 1009], [FW 4001 or Stat 3011 or Stat 5021]) or #
Factors involved in growth, regulation, general dynamics of populations. Data needed to describe populations, population growth, population models, regulatory mechanisms.

FW 5411. Aquatic Toxicology. (3 cr. Prereq—Intro chem, intro ecol, #)
Pollution assessment approaches, biological effects, fate/flow of contaminants in aquatic systems, major types of pollutants.

FW 5455. Sustainable Aquaculture. (3 cr; A-F only. Prereq—Biol 2012, Chem 1021, Math 1031) or #
Role of aquaculture in fisheries management, biodiversity rehabilitation, and food production around the world. Implications for sustainability of human-environment interactions in different societies. Principles of fish husbandry.

FW 5571. Avian Conservation and Management. (3 cr. Prereq—EEB 4134 or grad or #)
Current problems in avian conservation/management. Nongame, wetland, game birds.

FW 5601. Fisheries Population Analysis. (3 cr; A-F only. Prereq—[4001 or Stat 5021], Biol 3407, [Math 1142 or Math 1271])
Introduction to theory/methods for estimating vital statistics of fish populations. Using microcomputers/statistical software to describe, analyze, model attributes of fish populations. Case studies from literature of marine/freshwater fisheries management.

FW 5603W. Habitats and Regulation of Wildlife. (3 cr; A-F only. Prereq—Biol 3407)
Environmental interactions of wildlife at population/community levels. Environmental threats from human activities. Habitat management practices. Objectives, polices, regulations in population management.

FW 5604W. Fisheries Ecology and Management. (3 cr. Prereq—EEB 4601)

FW 5625. Wildlife Handling and Immobilization for Research and Management. (2 cr; S-N only. Prereq—General biology, [grad student or vet med student or FW sr])
Practical techniques to maximize human/animal safety and encourage effective operations. Preparation procedures, legal responsibilities, capture drugs/delivery systems, safety measures, ethical issues, basic veterinary procedures for handling wildlife. Field course.Uses live animals.

FW 8200. Seminar. (1-4 cr; S-N only)
Oral and written student reports on selected topics from current literature in fisheries biology and management and wildlife. Lectures by and discussions with faculty and visiting specialists.

FW 8333. FTE: Master’s. (1 cr; NGA. Prereq—Master’s student, adviser and DGS consent)

FW 8394. Research in Fisheries. (1-4 cr)
Directed research.

FW 8444. FTE: Doctoral. (1 cr; NGA. Prereq—Doctoral student, adviser and DGS consent)

FW 8448. Fishery Science. (3 cr. Prereq—Grad student [in fisheries or wildlife conserv or conserv/biol or ecology] or #)
Applying ecological theory to study/manipulation of fish populations. Dynamics of growth, mortality, and yield of fish stocks. Field assessment methodology. Simulation applied to management problems. Web-assisted course. Students produce a publishable (print or electronic) project.

FW 8452. Conservation Biology. (3 cr; A-F only)
Seminar examining population-to-system-level biological issues (genetics; demographic processes; community, ecosystem, and landscape scale interaction; restoration ecology; ex situ strategies for restoration and recovery) and societal issues (social, economic, cultural perspectives; sustainable development strategies; roles of institutions; international and U.S. policies).

FW 8459. Stream and River Ecology. (3 cr. Prereq—Limmnology course or #)
Structure/dynamics of running waters from ecosystem perspective. Historical perspective, basic hydrology/fluvial geomorphology, terrestrial-aquatic interactions, detrital dynamics, metabolism, drift, trophic relations, biotic/abiotic interactions, ecosystem experiments and natural alterations, stability/succession, ecosystem dynamics in a watershed.

FW 8461. Advanced Topics in Fish Physiology. (1 cr. Prereq—Vertebrate physiology course or #)
Lectures, discussion, current literature. Complements 5459.

FW 8462. Advanced Topics in Fish Behavior. (1 cr. Prereq—5459 or behavior course or #)
Current literature. Complements 5459.

FW 8465. Fish Habitats and Restoration. (3 cr. Prereq—Intro ecology course or #)
Mechanisms underlying physiology/behavior that shape fish community structure in specific north temperate habitats. Techniques and planning procedures for restoring lakes/streams.

FW 8494. Research in Wildlife. (1-4 cr. Prereq—#)
Directed research.

FW 8576. Biology and Management of Large Mammals. (2 cr; A-F only. Prereq—[Ecology course, [wildlife, forestry, and ecology grad student]] or #)

FW 8666. Doctoral Pre-Thesis Credits. (1-18 cr. [max 60 cr]; NGA. Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

FW 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq—Max 18 cr per semester or summer; 10 cr total required [Plan A only])

FW 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq—Max 18 cr per semester or summer; 24 cr required)
FScN 5623. Regulation of Energy Balance. (2 cr. Prereq–5622 or 5627) Regulation of energy balance in humans, including regulation of food intake and of energy expenditure.


FScN 8310. General Seminar. (1 cr [max 2 cr]; S-N only. Prereq–#) Presentations by faculty, graduate students, and outside speakers.

FScN 8318. Current Issues in Food Science. (2 cr [max 4 cr]; A-F only. Prereq–4111, 4121, FScN 8444. FTE: Doctoral. 1-12 cr [max 18 cr per semester or summer; 10 cr total required (Plan A only)].

FScN 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Forest Resources (FR)

Department of Forest Resources
College of Natural Resources

FR 5104. Forest Ecology. (4 cr; A-F only. Prereq–[Knowledge of basic [botany, plant biology], grad student or #]) Form/function of forests as ecological systems. Characteristics/dynamics of species, populations, communities, landscapes, and ecosystem processes. Examples applying ecology to forest management. Weekly discussions on research topics, exercises, current issues in forest resource management. Required weekend field trip.


FR 5118. Physiological Ecology of Woody Plants. (3 cr; A-F only. Prereq–Grad student or #) Plant-water relations. Relations of biology to ecology and management. How physiological factors affect ecological processes and management decisions.

FR 5131. Geographical Information Systems (GIS) for Natural Resources. (4 cr; A-F only. Prereq–Grad student or #) Introduction to GIS. Focuses on natural resources. Data structures, sources, collection, and quality. Lab exercises introduce geodesy, map projections, spatial analysis, and cartographic modeling.


FR 5160. Northern Forest Field Course. (2 cr; A-F only. Prereq–Grad student or #) Field identification of common trees, shrubs, and nonwoody vascular plants. Plant communities, soil site relationships, wildlife values. Natural history of northern/boreal forests in terms of soils, ecological characteristics of trees, community-environment relationships, stand development, succession, and regeneration ecology. Land survey, tree/forest stand measurement, forest sampling techniques. Taught at Cloquet Forestry Center.

FR 5203. Forest Fire and Disturbance Ecology. (3 cr; A-F only. Prereq–Grad student or #) Course fee Ecology, history, management, and control of fire, wind, insect infestation, browsing, and other disturbances in forests. Disturbance regimes of boreal, northern hardwood, and other major forest types of North America. Influence of disturbance on wildlife habitat, urban/wildland interfaces, forest management, and ecosystem services to society. Emphasis on forest fire organization, training, and operations. Two-day field trip.

FR 5218. Measuring and Modeling Forests. (3 cr; A-F only. Prereq–3218, Math 1272, Stat 5021) Application of recently developed mathematics, computer science, and statistics methodologies to natural resource functioning, management, and use problems. Specific topics, software, and methodologies vary.


FR 5264. Advanced Forest Management Planning. (3 cr. Prereq–3471 or #) Applied models for forest planning to integrate forest resource conditions, ecosystem services, and social and economic factors. Forest-wide/landscape-level planning. Regional timber supply analysis. Optimization models and heuristic techniques as tools. Integrating sustainable timber production with desirable future conditions and spatial structure for biodiversity. Problems, case studies involving recent large-scale applications.

FR 5403. Teaching About Natural Resources. (1-2 cr. Prereq–NRRES major or elementary teacher or #) Forest community, tools used by natural resource managers, management practices. Natural-resource-related indoor/outdoor activities that can be translated for classroom use. One intensive weekend required.


FR 5471. Forest Planning and Management. (3 cr; A-F only. Prereq—Grad student or #) Processes/techniques for scheduling forest management. Goals of landowners, industry, government, and society. Issues/policies/regulations that influence management. Predicting outcomes, financial analysis, regulation, mathematical models, linear programming, economic analysis. Landscape-level management, historical range of variability, wildlife. How urban forest can be a tool to improve community infrastructure.

FR 5480. Topics in Natural Resources. (1-3 cr [max 12 cr. Prereq—#]) Lectures in special fields of natural resources given by visiting scholar or regular staff member. Topics specified in Class Schedule.

FR 5501. Urban Forest Management: Managing Green Spaces for People. (3 cr. Prereq—Grad student or #) Management concepts for green infrastructure of cities, towns, and communities. Urban forest as social/biological resource. Emphasizes management of urban forest ecosystem to maximize benefits. Tree selection, risk assessment, cost-benefit analysis, landscape planning, values, perceptions. How urban forest can be a tool to improve community infrastructure.


FR 5615. Field Remote Sensing and Resource Survey. (2 cr; A-F only. Prereq—3218, 3262) Field applications of remote sensing, sampling/measurement methods to inventory/mapping of forest and other natural resources. Offered at Cloquet Forestry Center.


FR 5700. Colloquium in Natural Resources. (1-3 cr. Prereq—#) Colloquium in specialized topics in natural resources.


FR 8106. Research Problems: Urban Forestry—Biologically Colonal and/or Post-colonial. (1-5 cr) Independent research under faculty guidance.

FR 8107. Seminar: Forest Resources. (1 cr) Assigned topics, problem analyses, and research reports.


"French (Fren)"

Department of French and Italian College of Liberal Arts

Fren 5250. Promenades Poetiques: The Subject in Motion. (3 cr [max 9 cr. Prereq—3111 or above) The search for the subject in poetry and poetic prose as revealed through the motifs of the “promenade” and experimentation with literary forms.

Fren 5260. The Returns of Tragedy. (3 cr [max 9 cr. Prereq—3111 or above) Tragedy as a dramatic form in relation to social order, myth and history. The notion of change as it relates to financial and intellectual speculation.

Fren 5270. “To Change or not to Change”: Speculations on (Post) Modern French Texts. (3 cr [max 9 cr. Prereq—3111) The meaning and purpose of the notion of “change” in French novels. Explore how a multiplicity of causes produces major changes in an individual’s personal and public life. The notion of change as it relates to financial and intellectual speculation.

Fren 5301. Critical Issues in French Studies. (3 cr. Prereq—# for undergrads) Introduces the methods of interpretation and critical debates that have shaped and continue to define the discipline of French studies. Provides a practical introduction to graduate-level literary research.

Fren 5350. Topics in Literature and Culture. (3 cr [max 12 cr. Prereq—3101 or equivalent) Problem, period, author, or topic of interest. See Class Schedule.


Fren 5501. Structure of French: Phonology. (3 cr. §3501. Prereq—[Ling 3001 or Ling 5001], grad student) Advanced study of sound system of contemporary French.

Fren 5502. Structure of French: Morphology and Syntax. (3 cr §3502. Prereq—5501 or #) Linguistic study of contemporary French word forms (inflectional and derivational morphology); introduction to French syntax (linguistic study of grammar) and characteristic syntactic constructions.

Fren 5531. Sociolinguistics of French. (3 cr §5531. Prereq—Ling 3001 or 5001, grad) Explores variation in the use of French associated with factors such as medium (oral/written), style (formal/informal), region, social and economic groups.

Fren 5995. Directed Teaching. (1-6 cr [max 24 cr.; 5-N only. Prereq—#) Directed teaching.

Fren 8110. Topics in Early Medieval French Literature. (3 cr [max 9 cr. Prereq—8111) Introduction to epic, romance, allegory, and theatre in Old French readings (12th-13th centuries). Specific topics/texts studied vary. Taught in French.

Fren 8111. Introduction to Old French. (3 cr) Studies in medieval French: instruction in reading Old French, sources of bibliography, and topics in medieval studies (language and literature). Taught in French.

Fren 8114. Old Provençal Language and Literature. (3 cr) Language and literature of Old Occitan (Old Provençal), chiefly troubadours’ poems. Some language instruction, reading of poems and other works, and consideration of nature and origins of “courtly love.” Knowledge of French, Spanish, or Italian desirable. Taught in English.


Fren 8210. Narrative, History, and Memory: Topics. (3 cr [max 9 cr.) Significance of narrative paradigm in literature, history, and cultural memory. Specific topics/texts treated vary. Taught in French.


Fren 8250. Critical Issues: Poetry. (3 cr [max 12 cr.) Significant critical issues relating to poetic writing of selected authors or periods.

Fren 8260. Critical Issues: Theatre. (3 cr [max 12 cr.) Significant critical issues relating to dramatic writing of selected authors or periods.

Fren 8270. Critical Issues: Prose. (3 cr [max 12 cr.) Significant critical issues relating to prose writing of selected authors or periods.

Fren 8271. The Novel of the Ancien Regime. (3 cr) Considers major novels of the 17th and 18th centuries in connection with developments in such areas as esthetic theory, intellectual currents, social transformations, and reading practices.

Fren 8290. Critical Issues: Perspectives on an Author. (3 cr [max 12 cr.) In-depth study of major author’s writing, critical tradition this writing has occasioned, and theoretical issues upon which this writing may be brought to bear.

Fren 8291. Jean Genet’s Writings and French Institutions. (3 cr) Jean Genet’s writings at the crossroads of several disciplines (politics, psychoanalysis, religion, and law). Genet’s novels, dramas, and political essays explore the power of institutional settings and strategies imagined by individuals to short-circuit their impact.

Fren 8333. FTE: Master’s. (1 cr; NGA. Prereq—Master’s student, adviser and DGS consent)
Courses

Fren 8571. The Rule of Reason, The Reign of Madness: Readings in Early Modern France. (3 cr.)
Relationship between construction of reason and madness in philosophy, legitimation of political rule, and the institution of literature in early modern France.

Fren 8410. Topics in Quebecois Literature. (3 cr. [max 9 cr.])
Quebecois in relation to other North American literatures and to Francophone literature produced elsewhere in the world. Specific topics/texts vary. Taught in French.

Fren 8420. Critical Issues: Francophone Literature. (3 cr. [max 9 cr.])
Critical issues relating to literature of Francophone world. Specific topics/texts vary. Taught in French.

Fren 8444. FTE: Doctoral. (1 cr.; NGA, Prereq:Doctoral student, adviser and DGS consent)

Fren 8521. History of the French Language. (3 cr.)
History of French from its origins in Latin to the present day; Aspects of diachronic phonology (sound change), morphology, syntax. Taught in French.

Fren 8666. Doctoral Pre-Thesis Credits. (1-18 cr. [max 60 cr.]; NGA, Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Fren 8777. Thesis Credits: Master's. (1-18 cr. [max 50 cr.]; NGA, Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

Fren 8888. Thesis Credits: Doctoral. (1-24 cr. [max 100 cr.]; NGA, Prereq–Max 18 cr per semester or summer; 24 cr required)

Fren 8980. Directed Teaching. (1-5 cr. [max 25 cr.])

Fren 8992. Directed Readings for Graduate Students. (1-5 cr. [max 25 cr.]; Prereq–#)

Fren 8994. Directed Research. (1-5 cr. [max 25 cr.]; Prereq–# may be taken as tutorial with #)

French and Italian (Frt)
Department of French and Italian
College of Liberal Arts
Frt 5257. Passionate Beings: Literary and Medical Pathologies in Italy and France from 1800 to the Present. (4 cr.)
Literary and medical representations of the passions in France and Italy from 1800 to the present. Texts range from theatrical works to medical treatises on the passions as ways for exploring notions of subjectivity, responsibility, order. Taught in English.

Frt 5850. Topics in French and Italian Cinema. (3 cr. [max 9 cr.]; Prereq–Knowledge of [French or Italian] helpful but not required)
Focuses on a theme, problem, period, filmmaker, or other topic of interest in French or Italian cinema. See Class Schedule. Taught in English.

Frt 5999. Teaching of French and Italian: Theory and Practice. (3 cr.)
Theoretical and practical aspects of language learning and teaching applied to French and Italian. Includes history of foreign language teaching in 20th-century United States. Taught in English.

Genetics, Cell Biology, and Development (GCD)
Department of Genetics, Cell Biology, and Development
College of Biological Sciences
GCD 5036. Molecular Cell Biology. (3 cr; Prereq–Biol 4004 or #; [or grad student] recommended)
Modern, integrative approaches combining cell/ molecular biology, biochemistry, and genetics to investigate cell organization/function. Membranes, signaling, extracellular matrix, secretion, endocytosis, cytoskeleton, nucleus. Analysis of scientific papers to illustrate new concepts in and experimental approaches to cell organization/function.

GCD 8008. Mammalian Gene Transfer and Expression. (2 cr; A-F only; Prereq–#)
Current gene transfer technology. Applications of genetic modification in animals, particularly transgenic animals and human gene therapy.

GCD 8073. Advanced Human Genetics. (3 cr; Prereq–8121 or #)
Application of molecular, biochemical, chromosomal, and population genetics to human variation and disease. Abnormal chromosome number and structure; abnormal enzyme, structural protein, receptor and transport; analysis of inheritance patterns; behavioral genetics; genetic strategies of common disease. Current research articles in human genetics.

GCD 8103. Human Histology. (5 cr; Prereq–Undergrad [biology, chemistry, math, physics] courses, #)
Light/electron microscopic anatomy of tissues and their organization into human organs. Emphasizes integrating structure, its relationship to function at levels from molecules to organs. Lecture, lab.

GCD 8121. Advanced Molecular Genetics. (3 cr; Prereq–Biol 4003, Biol 3021 or BioC 4331)
Action of gene in molecular, cellular, and organismal development. Mechanisms of information transfer and regulation of these processes in various biological systems; examination of original research.

GCD 8131. Advanced Genetics. (3 cr; Prereq–3022 or Biol 4003, Biol 3021 or BioC 4331 or #)
Literature-based course covering modern genetic analysis, including mutant screens, characterization of multiple alleles, gene mapping and cloning, genome sequencing, intergenic interactions, transposable elements, genetic mosaics, and molecular mechanisms of recombination.

GCD 8136. Techniques of Biological Electron Microscopy. (4 cr; Prereq–#)
Theory and methodology of transmission and scanning electron microscopy.

GCD 8151. Advanced Cell Biology. (3 cr; Prereq–Biol 4004, GCD 4034 or GCD 8121 or BioC 8002 or #)
Eukaryotic systems with emphasis on structure, function, and chemistry of cell organelles; selected specialized cells. Membranes, secretion, trafficking, cytoskeleton, cell motility, cell cycle, nucleus, and compartmentalization.

GCD 8161. Advanced Developmental Biology. (3 cr; Prereq–Biol 4004, GCD 8131 or Biol 4003, GCD 4034 or GCD 8121 or BioC 8002 or #)
Current concepts of and experimental approaches taken to understand basic mechanisms of development. Model organisms. Embryology, cell fate determination, differentiation, pattern formation, polarity, cell migration, and cell interactions. Analysis of original research articles.

GCD 8171. Literature Analysis. (2 cr; A-F only; Prereq–Grad MCDG major)
Critical reading and evaluation of current literature. May include evaluation of both excellent and flawed papers. Intensive and in-depth discussions of selected papers in molecular biology, genetics, cell biology, and developmental biology.

GCD 8212. Selected Topics in Cell and Developmental Biology. (3 cr; Prereq–8121 or BioC 8002, GCD 8151, [GCD 4161 or GCD 8161 or #])
Reading and discussion of papers from current literature. Topics selected from research areas of cell biology and developmental biology and experimental approaches taken in these fields. Topics vary annually.

GCD 8213. Selected Topics in Molecular Biology. (4 cr; BioC 8213, Prereq–8121 or BioC 8002 or #)
Sample topics: DNA replication, recombination and gene conversion, regulation of gene expression in procaroytes, regulation of gene expression in eucaryotes, chromatin structure and transcription, organismal gene expression. Lectures, readings, discussions.

GCD 8906. Seminar. (1 cr; max 4 cr; S-N only; Prereq–Grad MCDG major or #)
Current scientific research.

GCD 8910. Journal Club. (1 cr; max 4 cr; S-N only; Prereq–Grad MCDG major or #)
Critical evaluation of selected current literature.

GCD 8912. Genetic Counseling in Practice. (4 cr; A-F only; Prereq–MCDG MS student with genetic counseling specialization or #)
Practical genetic counseling, communicating genetics and medical information to the family, helping families with decision making.

GCD 8913. Psychosocial Issues in Genetic Counseling. (3 cr; A-F only; Prereq–MCDG MS student with genetic counseling specialization or #)
Interviewing skills, supportive counseling, and case-study analysis specific to genetic counseling.

GCD 8914. Ethical and Legal Issues in Genetic Counseling. (3 cr; A-F only; Prereq–MCDG MS student with genetic counseling specialization or #)
Professional ethics, ethical and legal concerns with new genetic technologies.

GCD 8920. Special Topics. (1-4 cr [max 8 cr.]; Prereq–Grad MCDG major or #)
Special topics.

GCD 8993. Directed Studies. (1-5 cr [max 15 cr.]; Prereq–#)

GCD 8994. Research. (1-5 cr [max 20 cr]; S-N only; Prereq–#)
Independent research determined by student’s interests, in consultation with faculty mentor.

Geographic Information Science (GIS)
Department of Geography
College of Liberal Arts
GIS 5571. Introduction to Arc/Info. (3 cr. (3 cr. Prereq–Geog 5561 or equiv; status in MGIS program or #)
Introductory overview of the Arc/Info system. Topics include data capture, geometric transformations and map projections, topology, editing systems, database management and map production.

GIS 5572. Advanced Arc/Info. (3 cr. (3 cr. Prereq–5571, Geog 5561 or equiv, status in MGIS program or #)
Advanced course in Arc/Info providing in-depth exploration of the topics emphasized in GIS 5571 as well as advanced topics including dynamic segmentation, address matching, and macro language programming.

GIS 5573. Desktop Mapping. (1.5 cr. (1.5 cr. Prereq–Geog 5561 or equiv, Geog 3511 or equiv, status in MGIS program or #)
Introduction to desktop mapping systems such as ArcView, MapInfo and MapTitude. Emphasizes the application of these systems to the display and analysis of geographical data.

GIS 5574. GIS and the Internet. (1.5 cr. (1.5 cr. Prereq–Geog 5561 or equiv, status in MGIS program or #)
The role of the Internet in GIS applications. Topics include GIS data sources on the Internet, the role of the Internet in information dissemination, Internet capabilities for interactive mapping and issues surrounding the development of GIS-related Web sites.

GIS 5575. Surveying and the Global Positioning System (GPS). (2 cr. (2 cr. Prereq–Geog 5561 or equiv, status in MGIS program or #)
Introduction to GPS (Global Positioning System) and other surveying techniques of use to GIS professionals. Topics include geodesy, data adjustment, datums, ellipsoids, coordinate systems, and transformations.
Courses

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 #) Conceptualizing geographic topics in 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. 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 5605X. Includes additional weekly seminar-style meeting, bibliography project on topic selected in consultation with instructor.

Geog 5605W. Geographical Perspectives on Planning. (4 cr. §3605) 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 5605V.

Geog 5724. Meanings of Place. (3 cr. Prereq—3 cr in geog #) Field investigation in physical, cultural, and economic geography; techniques of analysis and presentation; reconstruction of environments.

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]. Prereq—Sr or grad, #) Special topics and regions. Course offered by visiting professors in their research fields.

Geog 8001. Problems in Geographic Thought. (3 cr; A-F only) Currents of geographic thought in biophysical, GIS, human, cultural, and human-environment subfields. Focuses on concepts/paradigms through which geographers have attempted to unify/codify the discipline, around which debate has flourished, and about which interdisciplinary histories can be traced.


Geog 8005. Proseminar: Population Geography. (3 cr. Prereq—Student) Conceptual literature and empirical studies on fertility, mortality, and migrations in different parts of the world.

Geog 8006. Proseminar: Research Methods in Geography. (3 cr. Prereq—Student) Introduction to research design, strategies, methods of data collection, analysis, interpretation, and representation in contemporary geographic research.

Geog 8007. Proseminar: Theories of Development and Change. (3 cr. Prereq—Student) Recent research themes and questions in geography and related social sciences on Third World development; development theories, conceptually grounded case studies, and grassroots-based research.

Geog 8020. Research Seminar: Economic Geography. (3 cr. Prereq—Student) Contemporary research. Advanced topics, which vary with interests of faculty offering course.


Geog 8102. Proseminar: The State, the Economy, and Spatial Development. (3 cr. Prereq—Student) Introduction to research in economic, political, and urban geography; conceptual research addressing interrelationship between political and economic processes and spatial dynamics of urban and regional development; empirical research documenting nature and extent of this interrelationship at different spatial scales.

Geog 8103. Proseminar: Physical Geography. (3 cr. S-N only. Prereq—Student) Historical development of research in physical geography, current research trends, and transfer of current research to undergraduate education.

Geog 8105. Proseminar: Historical Geography. (3 cr. Prereq—Student) Introduction to conceptual research and empirical studies.

Geog 8106. Seminar: Social and Cultural Geography. (3 cr. Prereq—Student) Role of space and place in constitution of social and cultural life, social relations, and social identities; class, space, and place; geography of race and racism; environmental racism; geography of gender and sexuality; nationalisation, national identity, and territory.

Geog 8107. Geographic Writing. (3 cr; S-N only. Prereq—Student) Analysis of organization and presentation of geographic research. Critiques of selected examples of geographic writing.


Geog 8211. Environmental Policy. (3 cr. Prereq—Student) U.S. environmental policies at federal/state level. Policy formulation, implementation, and evaluation.

Geog 8212. Africa. (3 cr. Prereq—Student) Advanced topics. Topics vary with interests of faculty offering course.

Geog 8213. East Asia and China. (3 cr. Prereq—Student) Contemporary research, advanced topics. Topics vary with interests of faculty offering course.

Geog 8214. South Asia. (3 cr) Advanced topics. Topics vary with interests of faculty offering course.


Geog 8230. Theoretical Geography. (3 cr. Prereq—Student) Advanced topics. Topics vary with interests of faculty offering course. Contemporary theoretical/philosophical themes transcending subdisciplines of human/physical geography.

Geog 8240. Medical Geography. (3 cr. Prereq—5411 or #) Geographical inquiry concerning selected problems of health and health care.

Geog 8260. Seminar: Physical Geography. (3 cr. Prereq—Student) Topics of contemporary research. Topics vary with interests of faculty offering course.

Geog 8270. Seminar: Climatology. (3 cr; A-F only. Prereq—Student) Sample topics: climate modeling; climatic variability; climate change and predictability; severe local storms; drought; energy balance; urban climate; statistical climatology.

Geog 8290. Seminar in GIS and Cartography. (3 cr. Prereq—Student) Selected concepts/methods. Topics, which vary yearly, include spatial analysis methods in GIS; advanced visualization methods; data quality and error propagation in GIS; generalization methods in GIS and cartography; role of time in GIS; interactive/animated cartography; incorporation of uncertainty.


Geog 8302. Research Development. (3 cr; S-N only. Prereq—Student) Students in geography and related social sciences are guided in key steps to effective research proposal writing.

Geog 8333. FTE: Master's. (1 cr. NGA. Prereq—Master's student, adviser and DGS consent)

Geog 8336. The Developmental State. (3 cr; A-F only. Prereq—Student) Why certain interventionist states in third world countries have been able to guide their economies to overcome legacy of underdevelopment while most have failed to induce development. Internal/external conditions that facilitated such departure from underdevelopment. Comparative national/provincial case studies: Taiwan, South Korea, Botswana, Brazil, India. Applying theoretical approaches to policy issues.

Geog 8350. Seminar: World Population. (3 cr. Prereq—Student) Contemporary research in world population development and problems. Topics vary with interests of faculty offering course.

Geog 8444. FTE: Doctoral. (1 cr. NGA. Prereq—Doctoral student, adviser and DGS consent)

Geog 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr], NGA. Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Geog 8777. Thesis Credits: Master's. (1-18 cr [max 50 cr]; NGA. Prereq—Max 18 cr per semester or summer. 10 cr total required [Plan A only])

Geog 8800. Seminar: Development of Geographic Thought. (3 cr. Prereq—Student) Topics vary with interests of faculty offering course.

Geog 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq—Max 18 cr per semester or summer; 24 cr required)

Geog 8970. Directed Readings. (1-5 cr)

Geog 8980. Topics in Geography. (1-3 cr [max 15 cr]. Prereq—Student) Seminar offered by visiting or regular faculty. Topics vary with interests of faculty.

Geog 8990. Research Problems in Geography. (1-5 cr) Individual research projects.

GeoE 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)


GeoE 8337. Boundary Element Methods II. (3 cr; A-F only. Prereq–IT upper division grad student) Transient and nonlinear problems.

GeoE 8351. Advanced Groundwater Mechanics I. (3 cr; A-F only. Prereq–CE 4351, IT grad student or IT grad student) Solute transport: shallow flow in leaky aquifers; complex variable methods in groundwater flow; analytic element method: potentials for line sinks, line doublet, line dipoles, area sinks, and special analytic elements; singular Cauchy integrals; analytic elements in domains with closed boundaries.

GeoE 8352. Advanced Groundwater Mechanics II. (3 cr; A-F only. Prereq–4351 or CE 4351, IT grad student or IT grad student) Applying complex methods, including conformal mapping, in groundwater mechanics; solving Cauchy problems with free boundaries using the hodograph method; drains in aquifers with free boundaries; superposition of solutions with drains; singular Cauchy integrals; boundary elements.

GeoE 8361. Engineering Model Fitting. (3 cr; A-F only. Prereq–IT grad student or IT grad student) Parameter estimation and inverse modeling for civil and geological engineering. Formulating engineering model fitting problems; comparing and selecting various fit criteria; implementing numerical algorithms; analyzing and interpreting results using both statistical and qualitative tools; designing future measurement plans.

GeoE 8844. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

GeoE 8866. Doctoral Pre-Thesis Credits. (1-18 cr; max 60 cr; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

GeoE 8877. Thesis Credits: Master’s. (1-18 cr; max 50 cr; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

GeoE 8888. Thesis Credits: Doctoral. (1-24 cr; max 100 cr; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Geology and Geophysics (Geo)

Department of Geology and Geophysics


Geo 5002. Earth History for Teachers. (4 cr. §1002. Prereq–Educ degree) Evolution of life on Earth. Interrelationships of plate tectonics, climate change, and organic evolution leading to present ecosystem. Impact of hominid evolution on Earth systems and geological processes on human society. Required project designed to enhance ability to teach Earth history to K-12 students.

Geo 5003. Dinosaur Evolution for Teachers. (3 cr. §1003. Prereq–Ed degree) Dinosaurs and Mesozoic Earth. Used to introduce evolution, 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 dinosaur evolution to K-12 students.

Geo 5006. Oceanography for Teachers. (3 cr. §1006. 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 module 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 ecosystems and biogeochecmical cycles perspective. Geologic limits to resources and carrying capacity of Earth. Land use planning, environmental impact assessment, egeoecologic world models. Field project and trip.


Geo 5202. Geological Theromechanical 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 5302. Isotope Geology. (3 cr; A-F only. Prereq–2303 or #) Theory and uses of radioactive, radiogenic, and stable isotopes in geology. Radioactive dating, geothermometry, and tracer techniques in geologic processes.

Geo 5533. 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.
Courses


Geo 5601. Advanced Sedimentology. (4 cr. Prereq–4602 or #) Modern techniques of sedimentary basin analysis focusing on interactions among the lithosphere, atmosphere, and hydrosphere. Sedimentary faces of modern and ancient systems, petrology of clastic and carbonate deposits, tectonic and paleoclimatic interpretation, 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 processes models, and as basins in geologic history. Includes many case studies and examines 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 natural reservoirs. 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–CSci 1107 or CSci 1113 or #) Visualization hardware and software, three-dimen- sional graphics, representation of scientific data, modeling, user interface techniques, output, commonly used algorithms, animation, case studies and examples.

Geo 8243. Principles of Rock Magnetism. (1-3 cr. Prereq–4204 or #) Remanent magnetizations, their classification and origins. Fundamentals of fine particle magnetism; magnetic minerals; separation of multicomponent magnetizations; tests of chemical change on magnetization; magnetic proxies of climatic and environmental change; biomoagnetism.

Geo 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

Geo 8351. Geostatistical Modeling of Aqueous Systems. (3 cr Prereq–5301 or #) Using mass transfer reaction path models to assess chemical evolution of natural fluids, hydrothermal alteration processes, and formation of hydrothermal ore deposits.


Geo 8354. Igneous Petrology. (3 cr Prereq–4301 or #) Igneous rocks and processes, emphasizing geochemistry of melts and minerals. Content varies with instructor and student interest.


Geo 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

Geo 8666. Doctoral Pre-Thesis Credits. (1-18 cr; max 60 cr; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Geo 8712. Transport Phenomena and Analytical Geochemistry. (3-4 cr. Prereq–5701 or CE 3502 or #) Microscopic flow parameters, momentum, mass and energy transport through porous media. Geologic factors in aquifer performance, equations for groundwater flow, and analysis of pump tests.


Geo 8777. Thesis Credits: Master’s. (1-18 cr; max 50 cr; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

Geo 8888. Thesis Credits: Doctoral. (1-24 cr; max 100 cr; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Geo 8970. Seminar: Current Topics in Geology and Geophysics. (1-4 cr [max 30 cr]; A-F only. Prereq–#)

Geo 8980. Seminar: Current Topics in Geology and Geophysics. (1-4 cr [max 30 cr]; S-N only. Prereq–#)

Geo 8994. Research in Geology and Geophysics. (1-4 cr [max 30 cr]. Prereq–#) Independent research under faculty supervision.

German (Ger)

Department of German, Scandinavian, and Dutch College of Liberal Arts

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 5011) Phonology, morphology, and syntax of standard German.

Ger 5410. Topics in German Literature. (3 cr. max [9 cr]. Prereq–3104 or #) 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 #) 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–3xx0 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–4301) 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 MGH 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 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 5801. German Script Since 1500: Readings. (3 cr.) Handwriting and printed book scripts will be read, 1500-2000.

Ger 5993. Directed Studies. (1-4 cr [max 12 cr]. Prereq–A, F, U) Guided individual reading or study.

Ger 8002. Basic Seminar in German Studies. (3 cr) Theory and methods applicable in study of German literature and culture; introduction to bibliography and research skills; guided research projects.

Ger 8200. Seminar in Medieval German Literature and Culture. (3 cr. max [9 cr]. Prereq–5721) Topics on specific author, group of authors, genre, or subject matter in German literature, ca. 800-1450.
Courses

Ger 8210. Seminar in Early Modern German Literature and Culture. (3 cr [max 9 cr])
Topics on specific author, group of authors, genre, or subject matter in German literature, 1450-1750.

Ger 8220. Seminar in 18th-Century German Literature and Culture. (3 cr [max 9 cr])
Literary, philosophical, and aesthetic texts emerging from mid-18th century literary trends, 1720-1810. Cultural and historical contexts of Enlightenment and Weimar Classicism.

Ger 8230. Seminar in 19th-Century German Literature and Culture. (3 cr [max 9 cr])
Examining of an author, issue, or movement, using a variety of critical approaches.

Ger 8240. Seminar in 20th-Century German Literature and Culture. (3 cr [max 9 cr]; A-F only)
Topics on literature, film, or other forms of “high” and popular culture.

Ger 8300. Topics in Literature and Cultural Theory. (3 cr [max 9 cr])
Authors, themes, movements, and social issues from 1700 to present. Focus varies each semester.

Ger 8700. Philological Seminar. (3 cr [max 9 cr])
Sample topics: history of Germanic tribes, history of scholarship in Germanic philology, Germanic dialects.

Ger 8701. Philological Proseminar I: Bibliography. (3 cr; A-F only)
Introduction to bibliography emphasizing Germanic medieval languages and literatures and medieval Latin. See Scan 8702.

Ger 8741. Gothic and Methods of Comparative Reconstruction I. (3 cr)
The oldest extant Germanic language and the prehistory of Germanic group of languages.

Ger 8742. Gothic and Methods of Comparative Reconstruction II. (3 cr. Prereq–G8741)
Continuation of study of the oldest extant Germanic language and the prehistory of Germanic group of languages.

Ger 8751. Paleography: Medieval Manuscript Readings. (3 cr; A-F only)
Introduction to techniques of reading and transcribing medieval German and Latin manuscripts.

Ger 8752. Medieval Text Editing. (3 cr)
Introduction to techniques of historical text-critical editing of medieval Germanic and Latin manuscripts.

Ger 8793. Germanic Philology Directed Study. (1-3 cr [max 12 cr]; Prereq–G8741, Δ)

Ger 8810. Feminist Literary Theory and History. (3 cr [max 9 cr])
Cultural, historical, and literary examination of writings of German women, 18th-20th centuries, and feminist theoretical tools used to analyze their work.

Ger 8820. Seminar: Advanced Theory. (3 cr [max 9 cr])
Topic in critical thought, e.g., the Frankfurt School, hermeneutics, reception theory.

Ger 8994. Directed Research. (1-3 cr [max 12 cr]; Prereq–G8741)
May be taken as tutorial with #)

German, Scandinavian, and Dutch (GSD)

Department of German, Scandinavian, and Dutch College of Liberal Arts

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

GSD 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser approval, Δ)

GSD 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser approval, Δ)

GSD 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr])
NGA. Prereq–Doctoral student who has not passed prelim oral)

GSD 8801. Dissertation Seminar. (3 cr)
For doctoral students in German and Scandinavian studies who are beginning to establish topics and do research for their dissertations. Discussion of a variety of topics related to this process as well as presentation of some written work.

GSD 8802. Dissertation Writing Seminar. (3 cr; S-N only, Prereq–8801, completion of doctoral preliminary examinations)

GSD 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA)

Gero 8020. Seminar in Gerontology. (2 cr; Prereq–#)
Meets weekly. Students present and discuss new or completed research projects on aging; conduct formal reviews using NIH formats; critique published papers using formal review criteria employed by gerontology journals; become familiar with large database in aging and describe how that database has been used in research for secondary analyses.

Gerontology (Gero)

School of Public Health

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)
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.

Gero 8020. Seminar in Gerontology. (2 cr; Prereq–#)
Meets weekly. Students present and discuss new or completed research projects on aging; conduct formal reviews using NIH formats; critique published papers using formal review criteria employed by gerontology journals; become familiar with large database in aging and describe how that database has been used in research for secondary analyses.

Global Studies (GloS)

Institute of International Studies

College of Liberal Arts

GloS 5103. Colonialism and Modernity. (3 cr; A-F only; Prereq–[3101, Area 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. Interregional 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, Area 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 5410. Interactive Global and Local Studies. (3 cr; A-F only; Prereq–#)
Global studies topics, locally in the Twin Cities and Minnesota, and internationally through linked communication with classes at cooperating universities in other countries. Students communicate with counterparts abroad through e-mail to develop comparative/interactive elements. Possible topics: role of river in local history, grain storage, manufacturing, trade, growth of metropolitan area.

GloS 5502. Other Worlds: Globality and Culture. (3 cr; A-F only; Prereq–[3101, Area 3144, grad student] or #)
Interconnectedness of world. Considering not one world, but many. Colonialism, consumption, diasporic conditions, global media, nationalism, supra-national governance. How globalization is experienced контested 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 5801. International Development: Critical Perspectives on Theory and Practice. (3 cr; A-F only. Prereq–Admission to MSID prog, grad student)
Interdisciplinary approaches to development. Assumptions, competing paradigms, analysis of policies, projects, problems. Globalization, societal crisis, indigenous alternatives to dominant paradigm. Partially taught in separate sections to deepen understanding of particular topic (e.g., environment, health, education).

GloS 5802. Cross-Cultural Perspectives on Work. (3 cr; A-F only. Prereq–Admission to MSID prog, grad student)

GloS 5803. MSID Country Analysis. (3 cr; A-F only. Prereq–Admission to MSID prog, grad student)
Multidisciplinary study of host country. Emphasizes social sciences and history, especially concepts/information regarding development issues.

GloS 5805. Grassroots Development Internship. (3 cr; A-F only. Prereq–Admission to MSID prog, grad student)
Grassroots internship with a host-country development agency or project through Minnesota Studies in International Development. Community characteristics, development strategies/problems, organizational structure/culture, cross-cultural communication issues.

GloS 5806. Topics: Case Studies in International Development. (3 cr; A-F only. Prereq–Admission to MSID prog, grad student)
Development issues illustrated in students’ local-level projects through MSID. Focuses on a particular sector as it relates to development of country. Sample topics: environment and development; health and development; education, literacy, and development; women and development.

GloS 5807. Applied Field Methods. (3 cr; A-F only. Prereq–Admission to MSID prog program)
Application of selected field research methods in rural/urban settings in Asia, Africa, and Latin America. Analysis of practical, ethical, and theoretical issues raised through small field assignments and individual research projects.

GloS 5808. MSID Directed Research. (3 cr [max 4 cr]; A-F only. Prereq–Admission to MSID prog, grad student)
Research project based on field work in Ecuador, India, Kenya, or Senegal through Minnesota Studies in International Development (MSID).

GloS 5900. Topics in Global Studies. (1-3 cr)
Proseminar. Selected issues in global studies. Topics specified in Class Schedule.
Courses

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–#, ∆) 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–#, ∆) Qualified students work on a tutorial basis.

GloS 8061. Scope and Methods of Area Studies. (3 cr; A-F only) Introduction to subfields, problems, and methodologies. Scholarly norms and ethics of cross-cultural academic research.

Graduate School (Grad)

Graduate School

Grad 8101. Teaching in Higher Education. (3 cr) Teaching methods/techniques. Focuses on active learning, critical thinking, practice teaching, and preparing a portfolio to document/reflect upon teaching. Readings, discussion, peer teaching, e-mail dialog, reflective writing, co-facilitation of course.

Grad 8102. Practicum for Future Faculty. (3 cr; S-N only. Prereq–8101 or equiv, #) Collegial support for teaching, faculty mentorship at regional college or university, investigation of faculty role at a variety of institutions, classroom observation/feedback, preparation for academic job search. Non-native English speakers must pass University requirements for international teaching assistants.

Greek (Grk)

Department of Classical and Near Eastern Studies
College of Liberal Arts

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–5012 or #) Detailed study of English-to-Greek verse composition and/or the writing styles of individual Greek authors.


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, aretalogy, 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 [max 18 cr]. Prereq–#) Guided individual reading or study.

Grk 5994. Directed Research. (1-12 cr [max 18 cr]. Prereq–#, ∆) Supervised original research on topic chosen by student.

Grk 5996. Directed Instruction. (1-12 cr [max 20 cr]. Prereq–#, ∆) Supervised teaching internship.

Grk 8120. Greek Text Course. (3 cr [max 15 cr]. Prereq–3111 or #; not for students in dept of Classical and N East Srs) Students attend 3xxx Greek courses. Supplementary work at discretion of instructor.

Grk 8262. Survey of Greek Literature I. (3 cr) Extensive selections from all genres of Greek literature of archaic and early classical periods.

Grk 8263. Survey of Greek Literature II. (3 cr) Extensive selections from Greek authors of the classical and Hellenistic era.

Grk 8910. Seminar. (3 cr [max 30 cr]) Various topics in Greek literature examined in depth with emphasis on current scholarship and original student research.

Health Informatics (HInf)

Department of Laboratory Medicine and Pathology
Medical School


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 3 cr]; S-N only. Prereq–5430, 5431, #) Practical industrial experience not directly related to student’s normal academic experience.

HInf 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

HInf 8405. Advanced Topics in Health Computer Sciences I. (3 cr. Prereq–#) Computer systems design for health sciences, small computer concepts/use, computers for clinical services, computer-aided medical decision making, biomedical image processing, pattern recognition. All topics use techniques, and examples or case studies, from health sciences.

HInf 8406. Advanced Topics in Health Computer Sciences II. (3 cr. Prereq–#) Computer systems design for health sciences, small computer concepts/use, computers for clinical services, computer-aided medical decision making, biomedical image processing, pattern recognition. All topics use techniques, and examples or case studies, from health sciences.

HInf 8434. Medical Decision Support Techniques. (3 cr; A-F only. Prereq–5432 or #) Examines systems based on statistical and logical approaches to decision making that include statistical prediction, rule-based systems, case-based reasoning, quantitative reasoning, and neural networks, and issues related to their use.

HInf 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

HInf 8446. Professional Studies in Health Informatics. (1-2 cr; A-F only. Prereq–5431, Pubhl 5452 or #, grad hhth inf major) Health informatics as a profession, including discipline, responsibilities, resources, and job opportunities. Directed experiences in consulting, teaching, writing, conducting research, and managing facilities.

HInf 8492. Advanced Readings in Health Informatics. (1-6 cr; A-F only. Prereq–#) Directed readings in topics of current or theoretical interest in medical informatics.

HInf 8494. Research in Health Informatics. (1-6 cr; A-F only. Prereq–#) Directed research under faculty guidance.

HInf 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]) NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)
Courses

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. (1-5 cr. Prereq–#) Guided individual reading or study.

Hindi (Hindi)

Department of Asian Languages and Literatures College of Liberal Arts

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 5992. Directed Readings. (1-4 cr [max 12 cr]; Prereq–3012 or #) Guided individual reading or study.

History (Hist)

Department of History College of Liberal Arts

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–Hist 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; A-F only. Prereq–Precoursework in ancient Near Eastern history recommended) Historical method/sources for ancient Near Eastern history. Historiographical 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. Provenance 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 abandonment of 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 [max 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 5285. Problems in Historiography and Representation of the Holocaust. (3 cr. Prereq–JwSt 3521 or Ref 3521 or #) Issues connected with the Holocaust. Inclusiveness of other groups, Holocaust vs. “Shaoh,” historiographical conflicts about perpetrators, problems of representation in literature/art, problems of narrative theology after Auschwitz.

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, nationalist, women’s); communist and 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 history; religion; and regions in the colonial world.

Hist 5381. Minnesota History Workshop. (3-4 cr [max 4 cr. Prereq–#]) A case study and seminar approach to historical research and interpretation. It offers teachers 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. Pr 5491) 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 Dynasties. (3 cr. Pr 5464, §EAS 3464) The Chinese Song (960-1279), 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 5465. China in the Ming and Qing Dynasties. (3 cr. Pr 5465, §EAS 3465) Political/sociocultural history of China from 1600 until end of Qing dynasty in 1911. Ethnicity, daily life, legal structures, city life, peasantry.

Hist 5467. State and Revolution in Modern China. (3 cr. Pr 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.

Hist 5468. Social Change in Modern China. (3 cr. Pr 5468) 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 5473. Japan's Modernities: Historiographies. (3 cr; A-F only, Prereq–[advanced undergrad, #] or grad student)


Hist 5474. Sex and the Politics of Desire: Japan and Beyond. (3 cr; A-F only, Prereq–Grad student or #)


Hist 5479. Wall and Market: History of Chinese Cities. (3 cr; A-F only, Hist 3479)

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 5501. Medieval Europe and the World. (3 cr; A-F only, Prereq–)

Place of medieval Europe in the world. Relations of Europe with Asia, Africa, and the Americas. European knowledge of the world's other great cultures. European travelers/explorers. Assessment of other cultures' knowledge of Europe in the period.

Hist 5505. Survey of the Middle East. (3 cr, Prereq–Grad or #)

Peoples, lands, cultures of the Middle East, from earliest civilizations to present.

Hist 5520. Topics in Chinese History. (3 cr; max 12 cr)

Selected topics not covered in regular courses. Taught as staffing permits.

Hist 5541. Islam in the Catholic Age. (3 cr, Prereq–Grad or #)


Hist 5547. The Ottoman Empire. (3 cr, Prereq–Grad student or #)

Founding of Ottoman society/state to empire, 1300 to end of empire in 1920. Lands, institutions, peoples, legacy. Impact on East European history.

Hist 5611. Proseminar in Medieval History. (3 cr; A-F only, Prereq–Grad student or #)

Examines basic scholarly bibliography for medieval Western European history during Middle Ages. Foundation for students to teach courses in medieval history, prepare for general doctoral exam.

Hist 5612. Proseminar in Medieval History. (3 cr; A-F only, Prereq–[5611, grad student] or #)

Examines basic scholarly bibliography for medieval Western European History during Middle Ages. Foundation for students to teach courses in medieval history, prepare for general doctoral exam.

Hist 5614. The Medieval Church. (3 cr, Prereq–Grad student or #)

Introduction to history of western church in Middle Ages. Emphasizes church teachings and institutional structures, beliefs/practices of lay people, medieval Christian encounter with non-Christian world.

Hist 5615. Proseminar in Medieval Spain. (3 cr; A-F only, Prereq–)

Graduate research on the development of the medieval kingdom of Spain from Roman times to ca. 1500. Emphasis on major social, economic, and cultural developments. Christian, Jewish, and Muslim interaction. Spain and the beginnings of European expansion.

Hist 5617. Spain in the Early Modern Period: 1492-1814. (3 cr; A-F only or Hist 5571)

Histography, documents, and archives of early modern Spain analyzed. Includes reading in modern English and Spanish and practical experience with Spanish manuscript documents from the period.

Hist 5621. Proseminar: The French Revolution. (3 cr; A-F only, Prereq–Grad or [advanced undergrad, #])

Historical literature about French Revolution of 1789. Old Regime political culture. Enlightenment, origins of the revolution, revolutionary transformations in society, politics/culture both in France and abroad, the Terror, Napoleon, revolutionary legacy.

Hist 5631. Proseminar: Comparative Early Modern History. (3 cr; A-F only, Prereq–Hist grad or #)

Critical reading of historical literature dealing with integration of the globe during the early modern period. ca. 1570-1750; book reports, class discussion.

Hist 5632. World History Proseminar. (3 cr; A-F only, Prereq–)

Theoretical approaches to world/global history. Review of major theories, controversies, chronologies, pedagogical approaches.

Hist 5633. Socio-Economic History of China. (3 cr; A-F only, Prereq–Grad student or [adv undergrad, #])

Nature of Chinese socio-political formations and economic development in Qing and Republican eras, 1644-1917. Establishment/methods of state rule, merchants,agrarian social structure, domestic industry, demographic regimes, capitalism, and imperialism. Comparisons using theoretical and case studies of economic development.

Hist 5634. Proseminar in Medieval and Early Modern European Russia. (3 cr; A-F only, Prereq–Some coursework in history of medieval and early modern European Russia or #)

Selected readings covering the major studies, key primary sources, and basic interpretations of the peoples of medieval and early modern European Russia as well as an analysis of the new approaches and interpretations in the field.

Hist 5649. Ideas in Context: Making Early Modern Knowledge, 1500-1800. (3 cr; A-F only, Prereq–Grad student or #)

Role of institutions/locus in development of early-modern European thought/culture. University, academy, learned society, princely court, museum, printing house, workshop, trading company, armies/navies, state bureaucracies, salons, other independent associations of nascent civil society.

Hist 5650. Proseminar: Early Modern Europe. (3 cr; A-F only, Prereq–Hist grad or #)

Critical reading of basic literature for early modern Europe, ca. 1450-1700, dealing with France, Germany, Italy, the Low Countries, and Spain. Each student chooses a country to focus on; book reports, class discussion.

Hist 5651. Proseminar in Tudor England: 1485-1603. (3 cr; A-F only, Prereq–#)

A critical study of principal writings about English history during the Tudor and Stuart periods.

Hist 5652. Proseminar in Stuart England: 1603-1689. (3 cr; A-F only, Prereq–#)

Critical study of principal writings about English history.

Hist 5671. Proseminar: Modern Britain. (3 cr; A-F only, Prereq–)

Critical study of major writings in British history, 1760-1945, and preparation for research in field.

Hist 5715. Readings in European Women's History: 1450-1750. (3 cr; A-F only)

Introduction to current historical research on European women's history, 1450-1750. Topics include gender roles and form of family structure, women's participation in religious movements, legal status of women.

Hist 5720. Society and Politics in Modern Europe. (3 cr [max 6 cr]; A-F only, Prereq–Grad or #)

Introduction to literature in English on problems of modern European social, cultural, political history. Thematic/geographic focus varies year to year. Topics include historical approaches to class/gender relations, state formation as social/political process, family history, evolution of public life, popular culture.

Hist 5721. Contemporary Europe from the Late 19th Century to the Beginning of the Cold War: 1890-1950. (3 cr; Hist 5721. Prereq–Previous coursework in 19th- and/or 20th-century Europe, A-F only)

The historical literature and debates surrounding major issues in the social, political, cultural, and economic development of Europe from the turn of the century through the impact of WWII. Topics include the development of imperialism, national rivalries, social and political conflict, the rise of fascism and communism, and the origins of war.

Hist 5735. European Women's History: 1750 to the Present. (3-4 cr, Prereq–)


Hist 5740. Topics in Modern German History. (3-4 cr; max 12 cr; A-F only, Prereq–#)

Readings and discussions on some central questions concerning the history of Germany during the modern period with a particular emphasis on the relationship between social change and political development. Offerings vary in thematic and chronological focus.

Hist 5736. Modern Greece; Mid-18th Century to the Present. (3-4 cr, Prereq–)

Central Europe under Habsburg rule from the 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 secondary works 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 5811. Nineteenth-Century U.S. History. (3 cr; A-F only. Prereq–Grad student or [undergrad honors history major, #])

Hist 5821. American History in the Twentieth Century. (3 cr; A-F only. Prereq–Grad student, #)
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 5845. History of American Capitalism. (3 cr; A-F only. Prereq–Grad student or #)
Historiography/history of American capitalism. Crucial events (e.g., market “revolution,” development of industrial cities) focus weekly discussions of new literature. Students analyze theoretical models of capitalism and new work in social, political, and economic history.

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 student 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 a history not covered in regular courses. Taught as staffing permits.

Hist 5920. Topics in African Social History. (3 cr [max 16 cr]. Prereq–Grad student or adv undergrad 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]. Prereq–Grad student, #)
Possible topics include cultural, economic, intellectual, political, and social history.

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. (3-4 cr [max 16 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]. Prereq–Grad or advanced undergrad with #)
Selected topics in Latin American history not covered in regular courses. Taught as staffing permits.

Hist 5960. Topics in History. (1-4 cr [max 16 cr]. Prereq–Grad or [advanced undergrad with #])
Selected topics in 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, 1350-1790. 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 5971. Proseminar: Editing and Publishing. (3 cr; A-F only)

Hist 5980. Topics in Comparative Women’s History. (3 cr [max 16 cr]. Prereq–Grad student or [advanced undergrad, #])
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 5990. Readings in Comparative History. (3 cr [max 15 cr]. Prereq–#)
Students read/discuss historical works that focus on common theme or employ similar methods in different geographic areas. Issues of cross-area comparison. Topics vary (e.g., peasant societies, race/ethnicity, states/nationalism).

Hist 5993. Directed Study. (1-16 cr [max 16 cr]. Prereq–Grad student or sr, A, #)
Guided individual reading or study.

Hist 5994. Directed Research. (1-16 cr [max 16 cr]. Prereq–Grad student or sr, &/A, #)
Work on a tutorial basis.

Hist 8015. Scope and Methods of Historical Studies. (3 cr; A-F only. Prereq–#)
Development of historical studies over time (especially in 19th and 20th centuries). Methodologies currently shaping historical research. Theoretical developments within the discipline during 19th and 20th centuries.

Hist 8021. Seminar: Advanced Historical Writing. (3 cr. A-F only. Prereq–Grad student with #)
Formal writing group. Writing practices for historians. Readings/discussions about historical analysis. Practical application of writing historical narratives. Students complete a major writing project based on their program needs and progress.

Hist 8110. Medieval History: Research Seminar. (3 cr; A-F only. Prereq–#)
Good reading knowledge of Latin, French, one other European language) Research in medieval European history, using primary source material.

Hist 8239. Readings in Gender, Race, Class, and/or Ethnicity in the United States. (3 cr; A-F only. Prereq–#)
Dynamics of gender, racial, class, and ethnic relations in U.S. history; intersections of these forces.
Courses

Hist 8240. Topics in Research in Gender, Race, Class, or Ethnicity in the United States. (3 cr; [max 6 cr]; A-F only. Prereq–#) Dynamics of gender, racial, class, and ethnic relations in U.S. history. Intersections of these forces. Topics vary by instructor.

Hist 8245. Race, Nation, and Genocides. (3 cr; A-F only) Theoretical literature on genocides and human rights. Historical case studies of genocides. Readings/ discussions on meaning of “genocide” and its codification in international law. Theoretical literature on racialization. Historical cases, primarily in 20th century (e.g., Armenian genocide, the Holocaust, Rwanda, former Yugoslavia). Students choose specific case to research.

Hist 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

Hist 8390. Research in American Indian History. (3 cr; A-F only. Prereq–S890 or Amin S890 or #) Research and writing skills in American Indian history. With instructor and other participants, students identify their research questions, locate sources with which to answer these questions, conduct original research, and produce a substantial research paper.

Hist 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

Hist 8464. Research in Yuan, Ming, and Qing History. (3 cr; A-F only. Prereq–Good working knowledge of classical Chinese, background in history of late imperial China) Basic skills and resources for doing research in history of late imperial China. Bibliographic exercises; reading and translating primary documents.

Hist 8465. Research in Yuan, Ming, and Qing History. (3 cr; Prereq–Good working knowledge of classical Chinese, background in history of late imperial China) Basic skills and resources for doing research in history of late imperial China. Students select, translate, and annotate texts appropriate to their research interests, and write a research paper centering on these texts.

Hist 8630. Seminar in World History. (3 cr; A-F only. Prereq–#) Critical examination of historical literature dealing with theoretical approaches to world history and teaching of world history.

Hist 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Hist 8709. Seminar: History of Sexuality. (3 cr; A-F only) Theories of sexuality (by, e.g., Foucault, Butler, deLauretis), their application in history. Topics may include: feminist critique of Foucault and the classics, psychoanalytic approaches to religious transformations such as the Reformation, varying forms of gender transgression, sexuality in colonial encounters, operation of sexual metaphors in political conflict, and AIDS and the writing of history.

Hist 8715. Research on European Women’s History, 1450-1750. (3 cr. Prereq–#) Research techniques for completing a major research paper based on primary sources.

Hist 8720. Research Seminar on Central European History. (1-4 cr [max 16 cr]; A-F only) Broad research theme/problem: in most cases preparation for dissertation. Students identify primary/secondary sources, conduct research, write paper, and read/comment upon each other’s drafts. Geographic focus varies with instructor, may include Germany or lands of former Habsburg Austrian empire.

Hist 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Max 18 cr per semester or summer; total required [Plan A only])

Hist 8857. Seminar: Research in the History of American Women. (3 cr; A-F only. Prereq–#) Students define a historical problem or area of research on a topic in American women’s history they would like to pursue in depth, identify appropriate sources and accomplish research in primary and secondary sources, write a 25 to 35-page scholarly article, and read and comment upon each other’s drafts.

Hist 8858. Research in Early American History. (3 cr; A-F only, Prereq–S8850 or #) Research and writing skills. With instructor and other participants, students identify their research questions, locate the sources with which to answer these questions, conduct original research, and produce a substantial research paper.

Hist 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

Hist 8900. Topics in European/Medieval History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8910. Topics in U.S. History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8920. Topics in African History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8930. Topics in Ancient History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8940. Topics in Asian History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8944. Research Seminar: New Directions in African Social History I. (3 cr; A-F only, Prereq–#) First of two-part course. Radical transformation in field of African social history during past two decades. Students select major research topic and begin preliminary investigation.

Hist 8945. Research Seminar: New Directions in African Social History II. (3 cr; S-N only, Prereq–8944, #) Second of two-part course. Students conceptualize and write major research paper.

Hist 8950. Topics in Latin American History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8960. Topics in History. (1-4 cr [max 16 cr]; A-F only. Prereq–Offered as staffing permits) Topics not covered in regular courses.

Hist 8961. Research Seminar: Intellectual History. (3 cr; A-F only) Approaches/methods. Readings on or exemplifying intellectual history. Intellectual history as something broader than history of philosophical thought: a set of approaches of broad cross-disciplinary applicability. Each student prepares a research paper on a topic of intellectual history and present it to class for critique.

Hist 8980. Topics in Comparative History Research. (3 cr; A-F only. Prereq–#) Topics vary. Students read/discuss historical works from different geographic areas, develop proposals for comparative research, or pursue comparative research projects.

Hist 8993. Directed Study. (1-16 cr [max 16 cr]; A-F only. Prereq–Grad student, #) Students work on tutorial basis. Guided individual reading or study.

Hist 8994. Directed Research. (1-16 cr; A-F only. Prereq–#)

History of Medicine (HMed)

Medical School

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 and 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. Prereq–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 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–#) 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.

HMed 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

HMed 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)

HMed 8631. Directed Study. (3-6 cr; A-F only)

HMed 8632. Directed Study. (3-6 cr; A-F only)

HMed 8666. Doctoral Pre-Thesis Credits. (1-18 cr [max 60 cr]; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

HMed 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

HMed 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)
History of Science and Technology (HSci)
Department of History of Science and Technology
Institute of Technology
HSci 5211. Biology and Culture in the 19th and 20th Centuries. (3 cr; S213)
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 5242. The Darwinian Revolution. (3 cr; S242)

HSci 5244. History of Ecology and Environmentalism. (3 cr; S244)
Development of ecological thought from 18th century natural theology to contemporary ecology and conservation biology; changing views of “balance” and the “ecology” of nature; conceptual and methodological developments in ecosystems ecology; connections between ecology and conservation, population and environmental politics.

HSci 5331. Technology and American Culture. (3 cr; S331)

HSci 5332. Science and American Culture. (3 cr; S332)

HSci 5401. Ethics in Science and Technology. (3 cr; S401)
Historical issues involving ethics in science. Ethical problems posed by modern science/technology, including nuclear energy, chemical industry, and information technologies.

HSci 5411. Art and Science in Early Modern Europe. (3 cr; S411)
Interaction of art and science, from Renaissance to 19th century. Development of linear perspective, color theory, artistic practice, and scientific illustration/representation.

HSci 5993. Directed Studies. (1-15 cr [max 15 cr]; Prereq–#)
Guided individual reading or study.

HSci 5994. Directed Research. (1-15 cr [max 15 cr]; Prereq–#)

Horticultural Science (Hort)
Department of Horticultural Science
College of Agricultural, Food and Environmental Sciences
Hort 5007. Advanced Plant Propagation. (3 cr; Prereq–#)
Control of growth/development in sexual/asexual reproduction of plants. Effects of environment, plant growth substances, photoperiods on dormancy, origin, and development of adventitious structures. Specialized propagation techniques. Lecture, lab.

Hort 5009. Pest Management in Horticulture. (3 cr; A-F only; Prereq–BioSci 3101 or #)
History of and practical information about pesticides used by horticulture industry. Pesticide modes of action. Use, application methods, environmental effects. Final three weeks devoted to labs on practical mixing and delivery systems.

Hort 5018. Landscape Operations. (3 cr; Prereq–#)
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–Bio 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–#)
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–#)
Principles of fruit production. Emphasizes temperature and fruit crops. Integrated management of fruit cropping systems, including site selection, cultural management practices, taxonomic classification, physiological/environmental 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–#)
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 5041W. Nursery Production and Management I. (3 cr; A-F only; Prereq–#)
Production, maintenance, and marketing of woody ornamental plants. Establishment/management of nursery or garden centers. Lab, field trips.

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

Hort 5052. Cut Flower Production. (3 cr; A-F only; Prereq–#)

For definitions of course numbers, abbreviations, and symbols, see page 153.
Courses

Hort 5071. Restoration and Reclamation Ecology. (3 cr. Prereq—Biol 2022 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—6 cr upper div Hort courses, #) In-depth exploration of concepts, technology, materials, or programs in specific area to expand professional competency/self-confidence. Planning, organizing, implementing, and evaluating knowledge obtained from formal education and from experience.

Hort 8005. Supervised Classroom or Extension Teaching Experience in Horticulture. (2 cr. Prereq—#) Classroom or extension teaching experience in one of the following departments: Agronomy and Plant Genetics; Biosystems and Agricultural Engineering; Horticultural Science; Plant Pathology; or Soil, Water, and Climate. Participation in discussions about effective teaching to strengthen skills and develop personal interest in human philosophy.

Hort 8007. Extension Horticulture Practicum. (1-5 cr. Prereq—9 grad cr in agr or bio sciences, #) Selected activities that may include development of an extension fact sheet, assistance in Dial-U Clinic, or preparation of a workshop or short course.

Hort 8023. Evolution of Crop Plants. (2 cr. A-F only. Prereq—5001, 5201 or 5301) Conduct literature, lab, and/or field research with horticultural plants and cropping systems.

Hort 8040. Horticultural Seminar. (1 cr [max 3 cr]. Prereq—Grad major in agr or applied plant sciences or hort or plant breed or plant soil, #) Reports and discussions of problems and investigational work.


Hort 8045. Plant Responses to Environmental Stresses. (3 cr. Prereq—Biol 3021 or Biol 4331, Biol 5412) Examined from molecular to organismal levels.

Hort 8090. Graduate Horticultural Research. (1-12 cr [max 18 cr. Prereq—#] Conduct literature, lab, and/or field research with horticultural plants and cropping systems.

Hort 8201. Plant Breeding Principles I. (3 cr. A-F only. Prereq—Stat 5301 or equiv) Principles and current methods involved in breeding agronomic and horticultural crops. Use of genotype/environment data to increase genetic gain, population improvement, parent selection, alternative selection strategies, breeding for special traits, and new approaches. Part of a two-semester sequence including Agro 8202.

Hort 8270. Graduate Seminar. (1 cr. A-F only. Prereq—Grad major in [hort or applied plant sciences or ent or agro or plant breed or plant path or soil] or #) Reports/discussions on problems, investigation work.

Hort 8280. Current Topics in Applied Plant Sciences. (1 cr. S-N only. Prereq—Grad major in [hort or applied plant sciences or ent or agro or plant breed or plant path or soil] or #) Topics presented by faculty or visiting scientists.


Hort 8900. Advanced Discussions. (1-3 cr; S-N only. Prereq—#) Special workshops or courses in applied plant sciences.

Human Factors (HumF)

School of Kinesiology

College of Education and Human Development


HumF 5505. Human-Centered Design: Principles and Applications. (3 cr. SS 3505, §Kin 3505, §Kin 5505) Application of design to meet human needs. Design of fabricated products, tools/machines, software/hardware interfaces, architecture, living environments, and complex sociotechnical systems.


HumF 8002. Proseminar in Human Factors. Ergonomics. (1 cr. A-F only) Prereq—Grad student or #) Issues and concerns tailored to interests of faculty and students regarding human factors/ergonomics, an interdisciplinary science concerned with interaction of performance and behavior with design factors in performance environment.

Human Resource Development (HRD)

Department of Work, Community, and Family Education

College of Education and Human Development

HRD 5001. Survey: Human Resource Development and Adult Education. (3 cr) Overview of fields of human resource development and adult education. Includes societal context, theories, processes, definitions, philosophies, goals, sponsoring agencies, professional roles, participants, and resources. Focus on the unique characteristics and ways the fields overlap and enhance one another.

HRD 5102. Economic Foundation of Human Resource Development. (3 cr. Prereq—#) Introduction to economics as a core discipline supporting the theory and practice of human resource development.

HRD 5103. Psychological Foundation of Human Resource Development. (1 cr. Prereq—#) Introduction to psychology as a core discipline supporting the theory and practice of human resource development.

HRD 5104. Systems Foundation of Human Resource Development. (1 cr. Prereq—#) Introduction to system theory as a core discipline supporting the theory and practice of human resource development.

HRD 5105. Strategic Planning through Human Resource Development. (3 cr. A-F only) Evaluation of human resource development efforts from the perspective of impact on organizations, work processes, and individuals, plus follow-up decisions.

HRD 5111. Facilitation and Meeting Skills. (1 cr) Introduction to the disciplines of planning and running effective meetings. Tools and methods for meeting management and evaluation are presented within the context of organization development.

HRD 5196. Internship: Human Resource Development. (1-6 cr [max 18 cr]. S-N only. Prereq—HRD 5201 or 5301) Students apply and contract for human resource development positions. Contracts describe specific HRD responsibilities to be fulfilled during internship and theory-to-practice learning outcomes.

HRD 5201. Personnel Training and Development. (3 cr; A-F only) Introduction to personnel training/development in organizations: analysis, design, development, implementation, evaluation.

HRD 5202. Training on the Internet. (3 cr) Major concepts, skills, and techniques for giving and receiving training over the Internet.

HRD 5301. Organization Development. (3 cr; A-F only) Introduction to major concepts, skills, and techniques for organization development/change.

HRD 5302. Managing Work Teams in Business and Industry. (3 cr; A-F only) Prereq—2 core courses in HRD Frameworks and strategies for developing effective work teams. Skill development in facilitating resolution of conflicts in organizations. Provides foundational information as well as practical applications for participants (upper-level and graduate students) to become small team leaders.

HRD 5408. International Human Resource Development. (3 cr) Problems, practices, programs, theories, and methodologies in human resource development as practiced internationally.

HRD 5409. Planning and Decision-Making Skills. (1 cr) Introduction to the disciplines of planning and decision making typically used in process improvement interventions. Tools and methods for facilitating group decisions and problem solving.

HRD 5496. International Field Study in Human Resource Development. (3 cr. Prereq—#) Field study of the organization development, personnel training and development, career development, and quality improvement theories and practices in a selected nation.
HRD 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. Emphasis on 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.

HRD 5611. Futurism in Human Resource Development and Adult Education. (3 cr)
Exploration of the implications of future developments in several arenas on theory and practice in human resource development and adult education.

HRD 5612. Managing and Consulting in Human Resource Development and Adult Education. (3 cr. Prereq—5001)
The theory of managing and consulting in human resource development and adult education. Includes a personal assessment of role requirements and experimentation with management and consultation processes and techniques.

HRD 5624. Sales Training. (3 cr; A-F only)
Strategies and techniques for developing salespeople.

HRD 5625. Technical Skills Training. (3 cr)
Analyzing technical skills training practices in business and industry. Systems and process analysis and troubleshooting of work behavior; design methods and developing training materials.

HRD 5626. Customer Service Training. (3 cr; A-F only)
Overview of customer service strategies used by successful organizations and training practices used to develop customer-oriented personnel.

HRD 5627. Management and Supervisory Training and Development. (3 cr)
Problems, practices, programs, and methodologies relating to the training and development of managers and supervisors, including needed competencies, needs assessment, delivery modes, and evaluation.

HRD 5628. Multimedia Presentations in Business. (3 cr. Prereq—BIE 5011 or equiv)
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 competencies. Designing instruction for performance training and vocational/technical education. Developing course syllabus components that clarify 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: Advanced. (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 5011 or equiv)
Alternative practices for teaching business applications software use—such as word processors, spreadsheets, graphics software, desktop publishing software, databases, and communications software—in both public school and industry settings.

HRD 5770. Special Topics in Human Resource Development. (1-4 cr; max 12 cr)
Explanation 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.

HRD 8001. Advanced Theory in Human Resource Development and Adult Education. (3 cr; A-F only. Prereq—5001 or AdEd 5001)
Theoretical understanding of individuals and organizations as adaptive entities; roles of human resource development and adult education in mediating complex demands.

HRD 8201. Advanced Personnel Training and Development. (3 cr; A-F only. Prereq—5201)
Personnel training/development research. Critical review of selected, innovative practices.

HRD 8301. Advanced Organization Development. (3 cr; A-F only. Prereq—5301)
Organization development research. Critical review of selected, innovative practices.

Human Resources and Industrial Relations (HRIR)

Industrial Relations Center

Curtis L. Carlson School of Management

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 a lab 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 Δ)
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 Δ)
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 qtr cr], 2.00 GPA or grad Student or Δ)
How employee performance is organized, appraised, and managed to achieve organizational/individual performance goals. Job design standards, employee appraisal systems, worker satisfaction.

HRIR 5025. Comparative and International Human Resource Management and Industrial Relations. (2 cr. Prereq—Grad majors must register A-F)

HRIR 5054. Public Policy and Employee Benefits. (2 cr. Prereq—Undergrad micro economics; HRIR grad majors must register A-F)
Survey of federally/state-mandated employee benefits: worker compensation, unemployment insurance, temporary disability insurance, social security. Effects of providing benefits on workers' incentives in regard to performance, acquisition, and maintenance of human capital, mobility, and risk sharing.

HRIR 5061. Public Policies on Work and Pay. (3 cr)
Analysis of public policies regarding employment, unions, and labor markets. Public programs affecting wages, unemployment, training, worker mobility, security, and quality of work life. Policy implications of the changing nature of work.

HRIR 5991. Independent Study in Human Resources and Industrial Relations. (1-8 cr. Prereq—[max 8 cr]. Prereq—Δ or #)
Individual readings or research topics.

HRIR 8000. Graduate Topics in Human Resources and Industrial Relations. (1-8 cr [max 8 cr]. Prereq—HRIR MA student or Sch Mgmt approval; grad majors must register A-F)
Evaluation of advanced research in human resources and industrial relations. Appropriate statistical inferences/applications. Sampling issues, multiple regression, advanced topics.

HRIR 8011. Quantitative Methods in Human Resources and Industrial Relations. (4 cr. Prereq—Grad HRIR major or Δ; grad majors must register A-F)
Applications of descriptive and inferential statistics, including probability, hypothesis testing, confidence intervals, analysis of variance, and regression.

HRIR 8012. Applied Quantitative Methods in Human Resources and Industrial Relations. (2 cr. Prereq—[≤ 811], grad HRIR major or Δ; grad majors must register A-F)
Computers used in class and homework exercises.

HRIR 8013. Research Methods in Social and Labor Policy. (3 cr. Prereq—8011; grad HRIR major or Δ; grad majors must register A-F)
Application of social science research methods to public policy issues.

HRIR 8014. Human Resource Information Systems. (2 cr. Prereq—Grad HRIR major or Δ; grad majors must register A-F)
Hardware and database fundamentals, software applications, security issues, vendor evaluation, system and software development and design issues, and strategies for gaining user acceptance.

HRIR 8021. Introduction to Human Resources and Industrial Relations. (3 cr. Prereq—Econ 1101, Econ 1102, Psy 1001; grad HRIR majors must register A-F)
Human resource management in contexts of labor markets and organizations. Valuing, employing, developing, motivating, and maintaining human resources in an industrial society. Staffing, training, and development; organizational behavior and theory; compensation and benefits, labor market analysis, and labor relations and collective bargaining.

HRIR 8022. Field Project. (4 cr. Prereq—[≤ 801], 8031, 8041, 8051, 8061, 8071; grad HRIR major or Δ; grad majors must register A-F; must have instructors consent to drop course)
Teams formulate and execute study of actual business problem faced by business, non-profit, or governmental organization, generally in Twin Cities.
Courses

**HRIR 8023. International Human Resource Management.** (2 cr. Prereq—MBA 6215 or grad HRIR major or Δ; grad majors must register A-F)
Growing U.S. interdependence with rest of the world and its implications for human resource management policies and practices at home and abroad.

**HRIR 8031. Staffing, Training, and Development.** (4 cr. Prereq—Psy 1001, grad HRIR major or Δ; grad majors must register A-F)
Introduction to staffing processes (recruitment, selection, promotion, transfer, dismissal, layoff, reassignment); development theory and techniques as mechanisms for influencing individual and organizational outcomes, such as performance, satisfaction, and climate.

**HRIR 8032. Staffing and Selection: Strategic and Operational Concerns.** (2 cr. Prereq—8031, HRIR grad student) or Δ; HRIR grad students must register A-F)
Theory/practice related to staffing decisions (recruitment, selection, promotion, transfer, dismissal, layoff, retirement) in organizations. Legal environment in which staffing decisions are made. Staffing from strategic/organizational perspectives.

**HRIR 8033. Employee Training: Creating a Learning Organization.** (2 cr. Prereq—[8031, HRIR grad student] or Δ; HRIR grad students must register A-F)
Theory, research practices related to design/implementation of employee training programs. Instructional design, training techniques, transfer of training, program evaluation/costing. Role of employees, firm policies/practices in training.

**HRIR 8034. Employee Development: Creating a Competitive Advantage.** (2 cr. Prereq—[8031 or 8034, grad HRIR major or Δ; grad majors must register A-F)
Career development and planning, employee and management development techniques, and organizational and employee concerns related to mobility, job stress, balancing work and family, obsolescence and plateauing, and cross-cultural alignments.

**HRIR 8041. Design and Management of Organizations.** (4 cr. Prereq—Econ 1101, Econ 1102, Psy 1001 or grad HRIR major or Δ; grad majors must register A-F)
Introduction to micro through macro organizational issues at individual, dyadic, group, organizational, and environmental levels; their implications for organizational design, control, coordination, and development.

**HRIR 8042. Organizational Structure and Performance.** (2 cr. Prereq—[8041 or 8051, grad HRIR major or Δ; grad majors must register A-F)
How different organizational practices (e.g., employee empowerment, job enrichment, profit sharing, employee stock ownership, individual incentives, information sharing, integration mechanisms) affect organizations in their competitiveness, profitability, workplace safety, employment stability, and wages. Coherence of system of organizational practices.

**HRIR 8043. Comparative Organizations and HRM Systems.** (2 cr. Prereq—[8041 or 8051, grad HRIR major or Δ; grad majors must register A-F)
Variations in organizational practices related to variations in ownership (profit, nonprofit, government, cooperatives), employment systems, culture, technology, market structure, etc. Organizational practices: employee empowerment, job enrichment, profit sharing, employee stock ownership, individual incentives, information sharing, integration mechanisms, and international comparisons.

**HRIR 8044. Motivation and Behavior in Contemporary Organizations.** (2 cr. Prereq—8041 or 8051, grad HRIR major or Δ; grad majors must register A-F)
In-depth study of major topics in microlevel organizational behavior. Accountability, organization citizenship behaviors, forms of organizational attachment, motivation, and issues of equity and justice.

**HRIR 8051. Compensation and Benefits.** (4 cr. Prereq—Econ 1101, Econ 1102, Psy 1001 or grad HRIR major or Δ; grad majors must register A-F)

**HRIR 8052. Compensation Theory and Applications.** (2 cr. Prereq—8051 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Relationship between economic and psychological theories and the design and operation of compensation programs. Demographic influences on compensation program outcomes. Statistical analysis applied to pay program design and administration. Global pay variations. Current pay issues and controversies.

**HRIR 8053. Employer-Sponsored Employee Benefit Programs.** (2 cr. Prereq—8011, 8051 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Design and administration of nonmandatory compensation benefit programs: medical expense insurance, pensions, profit sharing plans, disability, and other employee benefits. Effects of providing benefits on workers’ incentives with regard to performance, acquisition and maintenance of human capital, mobility, and risk sharing.

**HRIR 8061. Introduction to Labor Market Analysis.** (4 cr. Prereq—Econ 1101, Econ 1102 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Labor supply and demand analysis, its international dimensions; determination of wages, employment and unemployment; accumulation of human capital and investment in education and training; government regulation in areas of discrimination and workplace safety; role of unions in wage determination.

**HRIR 8062. Human Resource Strategy and Planning.** (2 cr. Prereq—8061 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Case studies used to diagnose strategy.

**HRIR 8063. Human Resources and Organizational Performance.** (2 cr. Prereq—8061 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Impact of human resource policies and practices on organizational productivity and effectiveness. Role of government, unions, and private sector institutions on organizational effectiveness.

**HRIR 8064. Topics in Micro Labor Market Analysis.** (2-4 cr. Prereq—8061 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
May include micro aspects of unemployment, implicit contracts and efficiency wages, investment in human capital, occupational choice, job search, job matching and turnover, migration, labor force participation, and government program evaluation.

**HRIR 8065. Topics in Macro Labor Market Analysis.** (2-4 cr. Prereq—8061 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
May include theories of unemployment based on sectoral shocks, theories of wage rigidity, efficiency wage theories, interindustry wage structure, role of labor market in resource allocation, and effects of government intervention in labor market.

**HRIR 8071. Labor Relations and Collective Bargaining.** (4 cr. Prereq—Econ 1101, Econ 1102 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Evolution of U.S. labor unions and public policy, bargaining environment and structure, goals and negotiations, contract administration and results. International comparisons, labor-management cooperation, and newly emerging issues.

**HRIR 8072. Labor Movements in a Changing World.** (2 cr. Prereq—8071 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Labor movement philosophies. Critical evaluation of labor movement growth and adjustment to environmental change. Domestic and international perspectives of labor movement innovations.

**HRIR 8073. Dispute Resolution: Labor Arbitration.** (2 cr. Prereq—8071 or Δ; grad HRIR major or Δ; grad majors must register A-F)
Arbitration to resolve grievances and impasses arising out of the collective bargaining agreement’s administration and negotiation. Arbitration law and legal issues, procedures and practices, case presentation, management rights, discipline and discharge, evidence, contract language interpretation, and remedies. Newly emerging approaches.

**HRIR 8074. Labor-Management Negotiations.** (2 cr. Prereq—8071 or Δ; grad HRIR major or Δ; grad majors must register A-F)

**HRIR 8333. FTE: Master’s.** (1 cr. NGA; Prereq–Master’s student, adviser and DGS consent)

**HRIR 8444. FTE: Doctoral.** (1 cr. NGA; Prereq–Doctoral student, adviser and DGS consent)

**HRIR 8666. Doctoral Pre-Thesis Credits.** (1-18 cr [max 60 cr]; NGA; Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

**HRIR 8777. Thesis Credits: Master’s.** (1-18 cr [max 50 cr]; NGA; Prereq—Max 18 cr per semester or summer; 10 cr total required [Plan A only])

**HRIR 8811. Advanced Quantitative Research Methods in Human Resources and Industrial Relations.** (2-4 cr [max 8 cr]; grad majors must register A-F)
General linear model and its assumptions and violations; simultaneous equations; pooling cross-section and time series; limited dependent/dependent variable models; sample selection models; hazard models. Emphasizes application to human resources and industrial relations.

**HRIR 8812. Seminar: Human Resources and Industrial Relations Research Methodology.** (2-4 cr [max 8 cr]; Prereq—HRIR PhD student or Δ; grad majors must register A-F)
Application in research projects.

**HRIR 8821. Seminar: Human Resources and Industrial Relations Systems.** (1-4 cr; Prereq—[HRIR core or Δ; HRIR PhD student or Δ; grad majors must register A-F]
Thought and research in the field. Investigating, integrating, and synthesizing more traditional related disciplines, theories, and research and interdisciplinary body of knowledge concerned with human resource and industrial relations problems and employment relationships.

**HRIR 8830. Seminar: Staffing, Training, and Development.** (1-4 cr [max 8 cr]; Prereq—8031 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
Concepts, problems, and research.

**HRIR 8840. Seminar: Organization Theory and Behavior.** (1-4 cr [max 8 cr]; Prereq—8041 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
Application in human resources and industrial relations research/practice.

**HRIR 8850. Seminar: Compensation and Reward.** (1-4 cr [max 8 cr]; Prereq—8051 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
Relevant theoretical models; formulation of research into compensation and reward issues.

**HRIR 8860. Seminar: Analysis of Current Labor Market Theory and Empirical Research.** (1-4 cr [max 8 cr]; Prereq—8061 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
Functions and operations of labor markets, theory, and research.

**HRIR 8870. Seminar: Labor Relations and Collective Bargaining.** (1-4 cr [max 8 cr]; Prereq—8071 or Δ; HRIR PhD student or Δ; grad majors must register A-F)
Analysis of contemporary theoretical and empirical research.
Courses

HRIR 8888. Thesis Credits: Doctoral. (1-24 cr; max 100 cr); NGA. Prereq–Max 18 cr per semester or summer; 24 cr required

HRIR 8991. Independent Study in Human Resources and Industrial Relations. (1-8 cr; max 8 cr; A-F only. Prereq–#) Individual readings and/or research projects.

Industrial Engineering (IE)

Department of Mechanical Engineering

Institute of Technology

IE 5080. Topics in Industrial Engineering. (4 cr. Prereq–Upper div or grad student) Topics vary each semester.


IE 5511. Human Factors and Work Analysis. (4 cr; A-F only. Prereq–Upper div IT 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 and motion standards.

IE 5512. Applied Ergonomics. (4 cr; A-F only. Prereq–Upper div IT 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 IT or grad student, 5511) Occupational health, and product safety. Standards, laws, and regulations. Hazards and their engineering control, including general principles, tools and methods, machinery 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 IT or grad student or CNR) Linear programming, simplex method, duality theory, sensitivity analysis, interior point methods, integer programming, branch/bound/dynamic programming. Emphasis on 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 screening/selection, 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 4521 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 envelopment 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 operations. Implications of emerging information technologies and of electronic commerce for supply chain management and factory operation.


IE 5553. Simulation. (4 cr. Prereq–[CNR or upper div or grad student]) Discrete event simulation. Using integrated simulation/animation environment to create, analyze, and evaluate realistic models for various manufacturing, assembly, and material handling systems. Experimental design for simulation. Random number generation. Selecting input distributions. Evaluating simulation output.

IE 8333. FTE: Master’s. (1 cr; NGA. Prereq–Master’s student, adviser and DGS consent)

IE 8444. FTE: Doctoral. (1 cr; NGA. Prereq–Doctoral student, adviser and DGS consent)


IE 8534. Advanced Topics in Operations Research. (4 cr. Prereq–[5551, 5532]) Special topics determined by instructor. Examples include Markov decision processes, stochastic programming, integer/continuitional optimization, and queuing networks.


IE 8541. Decision Support Systems. (4 cr; A-F only. Prereq–College-level computer programming course) Intelligent computer tools to aid designers, process planners, and analysts in making decisions better or faster.

IE 8552. Advanced Topics in Production, Inventory, and Distribution Systems. (4 cr. Prereq–[5551, 5532]) Cutting edge research issues in production, inventory, and distribution systems. Topics vary: stochastic models of manufacturing systems, stochastic inventory theory, multi-echelon inventory systems and supply chains, supplier/retailer and supplier-manufacturer coordination, supplier and warehouse networks, business logistics, transportation.

IE 8666. Doctoral Pre-Thesis Credits. (1-18 cr. max 60 cr; NGA. Prereq–Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

IE 8773. Graduate Seminar. (1 cr; S-N only) Recent developments.

IE 8774. Graduate Seminar. (1 cr; S-N only; Prereq–8773) Recent developments.

IE 8777. Thesis Credits: Master’s. (1-18 cr. max 50 cr; NGA. Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

IE 8794. Industrial Engineering Research. (1-6 cr. max (10 cr), Prereq–#) Directed research.

IE 8888. Thesis Credits: Doctoral. (1-24 cr. max 100 cr; NGA. Prereq–Max 18 cr per semester or summer; 24 cr required)

IE 8951. Plan B. (1 cr; S-N only) Structured environment in which students can complete M.S. Plan B project.

IE 8953. Plan B. (2 cr; A-F only. Prereq–8951) Structured environment in which students can complete M.S. Plan B project.

Information and Decision Sciences (IDS) Department of Information and Decision Sciences

IDS 8511. Conceptual Topics and Research Methods in Information and Decision Sciences. (4 cr. Prereq–Business admin PhD student or #) Relationships to underlying disciplines; major research streams; seminal articles, survey literature, key researchers. Provides framework for organizing knowledge about information and decision sciences.

IDS 8521. System Development. (2 cr. Prereq–Business admin PhD student or #; offered alt yrs) Why it is hard to develop efficient/effective information systems, what can be done to improve situation. Defining efficiency/effectiveness in development process and in systems. Producing/evaluating artifacts (constructs, models, methods, tools) that enable more efficient/effective information systems to be developed.

IDS 8711. Cognitive Science. (4 cr. Prereq–Business admin PhD student or #; offered alt yrs) Empirically based concepts of knowledge and reason, mental representation and conceptual systems that guide problem solving and decision making. Computational metaphor of mind drawn from psychology, computer science, linguistics, anthropology, and philosophy. Implications for understanding of knowledge work.


For definitions of course numbers, abbreviations, and symbols, see page 153.
IDSc 8722. Heuristic Decision Making. (2 cr. Prereq—Business Admin PhD student or #; offered alt yrs) How decisions are made, how knowledge is stored/used, how knowledge of variability/feedback influence decisions. Decisions at strategic, operational, individual level. Exceptional performance, pathologies of decision making. Basis for “best practice.” How knowledge is managed in decisions, decision failure. Folly, normal accidents, decision problems in which individuals manipulate information to influence/decieve others.

IDSc 8800. Research Seminar in Information and Decision Sciences. (4 cr [max 20 cr]. Prereq—Business admin PhD student or #) Topics, which vary by semester, are selected from new areas of research, research methods, and significant issues.

IDSc 8801. Research Seminar in Information and Decision Sciences. (2 cr [max 20 cr]. Prereq—Business Admin PhD student or #) New areas of research, research methods, issues.

IDSc 8802. Research Seminar in IDSc. (3 cr [max 15 cr]; A-F only. Prereq—PhD student or #) Topics selected from new areas of research, research methods and significant issues in information and decision sciences.

IDSc 8892. Readings in Information and Decision Sciences. (1-8 cr [max 16 cr]. Prereq—Business admin PhD student or #) Readings useful to a student’s individual program and objectives that are not available through regular courses.

IDSc 8894. Graduate Research in Information and Decision Sciences. (1-8 cr [max 16 cr]. Prereq—Business admin PhD student or #) Individual research on an approved topic appropriate to student’s program and objectives.

Infrastructure Systems Engineering (ISE)
Center for Development of Technological Leadership
Institute of Technology

ISE 5101. Project Management. (3 cr; A-F only. Prereq—ISE student) Broad areas in project management and leadership. Emphasizes practical understanding of business/engineering project management. Project planning, scheduling, controlling. Budgeting, staffing, task/cost control. Communicating with, motivating, leading, and managing conflict among team members. Lectures, discussions, experiential exercises.


ISE 5501. Geographic Information Systems. (2 cr; A-F only. Prereq—ISE student) Introduction to geographic Information Systems (GIS) for infrastructure. GIS application domains, data models/sources, analysis methods, and output techniques. Lectures, readings, hands-on experience with GIS software.


ISE 5504. Construction Law and Ethics. (2 cr; A-F only. Prereq—ISE student) Ethical framework for responsible management of public works projects. Moral leadership, trust in public/private organizations, quality control.

ISE 8105. Capstone Project. (3 cr; A-F only. Prereq—ISe student) Integrates knowledge from courses in Master’s program with job experience. Students prepare proposal, conduct project, and report results in written and oral form. Project involves aspect of design, management, or operation of some feature of infrastructure.

ISE 8333. FTE: Master’s. (1 cr; NGA: Prereq—Master’s student, adviser approval, DGS approval)

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 HRIR 3201 or #) 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 plans. Administration, 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.


Interdisciplinary Archaeological Studies (InAr)
College of Liberal Arts

InAr 5100. Topics in Interdisciplinary Archaeological Studies. (3 cr; A-F only. Prereq—InAr grad major or #) Topics specified in the Class Schedule.

InAr 8004. Method and Theory in Archaeology. (3 cr; A-F only. Prereq—Grad InAr major or #) Survey and evaluation of archaeological approaches to non-literary, material evidence for past human activities and societies.

InAr 8100. Interdisciplinary Seminar. (3 cr; A-F only. Prereq—Grad InAr major or #) Review and evaluation of approaches to interdisciplinary research; themes vary. Leadership and research shared by staff, visitors, and students.

InAr 8200. Directed Readings. (1-7 cr; Prereq—Grad InAr major or #)

InAr 8300. Directed Research. (1-7 cr; Prereq—Grad InAr major or #)
Courses

Interpersonal Relationships Research (IRel)

College of Education and Human Development

IRel 8001. Proseminar in Interpersonal Relationships Research. (1 cr; max 2 cr) S-N only. Prereq–Grad IRel minor or #)
Survey of major topics, including theoretical assumptions, methods, and samples of current research.

IRel 8021. Seminar: Statistical and Methodological Issues in Research on Dyadic Relationships. (2 cr; S-N only, Prereq–Grad IRel minor, #)
Survey of topics in design and analysis of research on behavior in two-person interactions.

IRel 8360. Seminar: Topics in Interpersonal Relationships Research. (1-3 cr) Prereq–Grad IRel minor or #)
Intensive study of topics.

Italian (Ital)

Department of French and Italian

College of Liberal Arts

Ital 5201. Reading Italian Texts: Poetics, Rhetoric, Theory. (3 cr) Prereq–Grad student or #)
Rhetorical/ poetic aspects of language and literature. Interpretive methods, theoretical concepts.

Ital 5203. Italian Travellers: From the Enlightenment to the Present. (3 cr) Prereq–Grad student or #)
Literary representations of travel, migration, immigration, exile, and tourism in Italy, from Enlightenment to present.

Ital 5209. Trecento 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.

Focius on issues of gender, sexual difference, equality, and emancipation raised by Italian women writers and thinkers from the 19th century to the present.

Ital 5305. Staging the Self: Theater and Drama in Modern Italy. (4 cr) Prereq–3305. Prereq–Grad student or #)
Theatrical representations of the self in modern Italy. Focuses on issues of identity, gender, and class in theatrical works ranging from Alfieri’s Mirra, Pirandello’s Enrico IV to Dacia Maraini’s Clytemnestra.

Ital 5321. 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.

Ital 5337. Nation and Narration: Writings in the 19th Century. (3 cr) Prereq–3015
Introduces the construction of modern Italian national identity by examining the role that literature plays in this process. Works by Manzoni, Foscolo, Leopardi, Gioia, Verga, Serao, and Deledda studied in the context of a range of sociopolitical and cultural issues.

Ital 5401. Mondo di Dante. (4 cr) Prereq–3015, 3201 or #)
Intensive reading of Dante’s Inferno, Purgatorio, and Vita Nuova with emphasis on Dante’s linguistic and cultural contributions.

Ital 5502. Making of Modern Italy: From the Enlightenment to the Present. (3 cr) Prereq–Grad student or #)
Italian literary, cultural, and symbolic practices, from Enlightenment to present.

Ital 5609. World of Dante. (4 cr) Prereq–Grad student or #)
Taught in English. Intensive reading of Dante’s Inferno, Purgatorio, and Vita Nuova with emphasis on the personal, poetic, and political stakes of the journey of Dante’s pilgrim through hell to the earthly paradise.

Ital 5806. Negotiating the Terms: Italian Film and Literature. (3 cr) Prereq–Grad student or #)
Cinematic representations of Italian literary texts, Basic tools of literary/film analysis. How both media impact Italian culture. Taught in English.

Ital 5970. Directed Readings. (1-4 cr max 16 cr)
Prereq–#)
Meets unique requirements decided on by faculty member and student. Individual contracts list contact hours, number of credits, written and other work required.

Italian 8333. FTE: Master’s. (1 cr; NGA; Prereq–Grad Master’s student, adviser and DGS consent)

Italian 8777. Thesis Credits: Master’s. (1-18 cr [max 50 cr]; NGA; Prereq–Max 18 cr per semester or summer; 10 cr total required [Plan A only])

Italian 8888. Thesis Credits: Doctoral. (1-24 cr [max 100 cr]; NGA; Prereq–Max 18 cr per semester or summer; 24 cr required)

Japanese (Jpn)

Department of Asian Languages and Literatures

College of Liberal Arts

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 16 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, course from classical Japanese language sequence or #)
Literary, 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 or #)
An examination of the stylistic and ideological aspects of the prose fiction, poetry, and non-fiction of the period 1863 to 1945. 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 or #)
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 5171. Women’s Writing in Premodern Japan in Translation. (4 cr; A-F only, Prereq–3162 or #)
Genki monogatari, a lengthy narrative, Makura no soshiki, 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 5451. Structure of Japanese:Syntax/Semantics. (4 cr) Prereq–3032, Ling 3001 or #)
Analysis of structure and meaning of Japanese sentence patterns.

Jpn 5452. Structure of Japanese: Phonology/ Morphology. (4 cr) Prereq–3032, Ling 3001 or #)
Generative and nongenerative approaches to Japanese sound and word structure.

Jpn 5453. Structure of Japanese: Discourse/ Conversation Analysis. (4 cr) Prereq–3032, Ling 3001 or #)
Analysis of Japanese written texts and conversations. Emergence of grammar in discourse, discourse/ conversational structural units, patterns genre, strategies, style, and sociolinguistics variables.

Jpn 5650. Proseminar: Japanese Linguistics. (4 cr) Prereq–124 or #)
Selected topics in Japanese linguistics and/or contrastive analysis of Japanese and English with attention to contributions from Eastern and Western linguistic traditions.

Individual study with guidance of a faculty member.
Jpn 8333. FTE: Master’s. (1 cr; NGA, Prereq—Master’s student, adviser and DGS consent)

Jpn 8444. FTE: Doctoral. (1 cr; NGA, Prereq—Doctoral student, adviser and DGS consent)

Jpn 8630. Seminar in Premodern Japanese Literature. (4 cr; max 12 cr; A-F only, Prereq—¶)
Selected topic in Japanese literature from 8th century to 1860s; theoretical tools used to analyze modern Japanese literature.

Jpn 8631. Premodern Poetry. (4 cr; A-F only; Prereq—Course from classical Japanese language sequence or ¶)
Presentation of poetry in four genres: imperial anthologies, narratives centered around poetry, personal collections, and nō plays. Implications of anthologizing/collecting, relationships between prose and poetry, and construction of an authorial figure.

Jpn 8632. Marginalized Literatures of Premodern Japan. (4 cr; A-F only; Prereq—Course from classical Japanese language sequence [preferably both courses] or ¶)

Jpn 8633. Premodern Urban Literature. (4 cr; A-F only; Prereq—Course from classical Japanese language sequence [preferably both courses] or ¶)
Literature and dramatic scripts between 1600-1868 about urban life in society in regions of Kyoto/ Osaka and Edo (Tokyo). Notion of popular culture, relationship between textual production and consumption, and discourses of the urban.

Jpn 8640. Seminar in Modern Japanese Literature. (4 cr; max 12 cr; Prereq—¶)
Selected topic in Japanese literature from 1860s to the present, including analytical styles and strategies used in Japanese literary criticism.

Jpn 8650. Seminar: Japanese Linguistics. (4 cr; max 12 cr; Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)
Research on selected topic in Japanese linguistics; emphasizes collecting and analyzing primary data.

Jpn 8866. Doctoral Pre-Thesis Credits. (1-18 cr; max 60 cr; NGA, Prereq—Max 18 cr per semester or summer; doctoral student who has not passed prelim oral)

Jpn 8777. Thesis Credits: Master’s. (1-18 cr; max 50 cr; NGA, Prereq—Max 18 cr per semester or summer; 10 cr total required [Plan A only])

Jpn 8888. Thesis Credits: Doctoral. (1-24 cr; max 100 cr; NGA, Prereq—Max 18 cr per semester or summer; 24 cr required)

Jewish Studies (JwSt)

Department of Classical and Near Eastern Studies
College of Liberal Arts

JwSt 5013. Biblical Law and Jewish Ethics. (3 cr; §3013, §3014, §5013)

JwSt 5111. Problems in Historiography and Representation of the Holocaust. (3 cr; Prereq—JwSt 5352 or Rel 5351 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 and art, 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 (Hechalot, Merkavah), Book of Creation (Sefer Yetzirah), precursors of Zohar—the Baal Shem, 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.

JwSt 5115. Mishnah and Midrash in Translation. (3 cr; A-F only; Prereq—JwSt 5013, JwSt 5113) Jewish law of society and as a way to actualize its value. Original socioreligious contexts, current applications. Biblical interpretations addressing moral, theological, legal, and literary problems.

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)
Topics specified in Class Schedule.

JwSt 5992. Directed Readings. (1-12 cr; max 12 cr; Prereq—¶)
Guided individual reading or study.

Journalism and Mass Communications (Jour)

School of Journalism and Mass Communication
College of Liberal Arts

Jour 5101. Advanced News Writing and Reporting. (3 cr; A-F only; Prereq—Enrollment in MA in health journalism or ¶)

Jour 5251. Psychology of Advertising. (3 cr; A-F only; Prereq—Jour major or minor or design comm major or graphic design premajor or design comm major or graphic design premajor or graphic design major or IDIM major or ICP major or BIS major or ¶; Psy 1001 recommended)
Psychological principles, research techniques, and applications in advertising/selling. Consumer attitudes /behavior. Psychological mechanisms upon which effectiveness of advertisements/commercials depends.

Jour 5316. Topics in Visual Communication. (3 cr; A-F only; Prereq—Jour major or minor or IDIM major or ICP major or BIS major or ¶)
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—Jour major or minor or IDIM major or ICP major or BIS major or ¶)
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 minor or grad major or IDIM 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 5601W. History of Journalism. (3 cr; A-F only; Prereq—Jour major or minor or IDIM 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 minor or IDIM 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—Jour major or minor or IDIM major or ICP major or ¶)

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 prejour 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 IDIM major or ICP major or BIS major; Legal/constitutional/delimitation 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 realist 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 prejour with adviser approval)
Mass media systems of 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 IDIM major or ICP major or BIS major)
Topics specified in Class Schedule.

Jour 5993. Directed Study. (1-3 cr; max 6 cr; A-F only; Prereq—Jour major or jour minor or approved IDIM major or ICP major or BIS major; GPA of at least 3.00, A, Q)
Directed study/projects.

Jour 8001. Studies in Mass Communication I. (3 cr; A-F only; ¶)
Historical development of mass communication studies in social sciences, humanities, and legal areas; survey of research literature utilizing individualistic and structural approaches to mass communication.

Jour 8002. Studies in Mass Communication II. (3 cr; A-F only; Prereq—Jour—8001) Literature on the history of the field, cultural and humanistic approaches to its study, and legal and ethical issues.

Jour 8003. The Changing Media Environment. (3 cr; A-F only; Prereq—Grad mass communication major)
Nonprofessional skills course. Prepares entering graduate students to work in the changing media environment, emphasizing its political, social, economic, legal, ethical, and technological implications nationally and globally; students produce scholarly research about changing media.

Jour 8191. Proseminar in Health Journalism. (4 cr; A-F only; Prereq—Enrolled in MA in health journalism)
Skills/tools necessary to report on health/medical news for various media. Working with quantitative/technical information.

Jour 8192. Proseminar in Advanced Health Journalism. (4 cr; A-F only; Prereq—Enrolled in MA in health journalism)
Skills/tools necessary to report on health/medical news for various media. Ethics, investigative skills. Reporting for specialized audiences. Second of two-course sequence.