

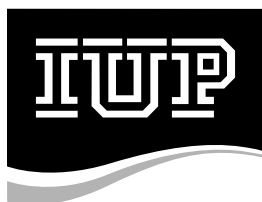
UNDERGRADUATE CATALOG 2017–18

COURSE DESCRIPTIONS (LISTED BY COURSE PREFIX)

A	B	C	D
E	F	G	H
I	J	K	L
M	N	P	Q
R	S	T	U
V	W		

This document is a direct extract from the full 2017–18 *Undergraduate Catalog*. As a result, the original page numbering will appear.

For information on other colleges at IUP, or about specific courses, please consult the full 2017–18 catalog, available at www.iup.edu/registrar/catalog. Earlier catalogs are also available at this web address.



Indiana University of Pennsylvania

Course Descriptions

Credit designation at right of title is expressed in (c) class hours per week, (l) lab or (d) discussion section hours per week, and (cr) number of credits per semester.

ACCT: Accounting Department of Accounting Eberly College of Business and Information Technology

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

ACCT 200 Foundations of Accounting 3c-0l-3cr

Provides a framework in which nonbusiness majors can see how accounting relates to, and reports on, business activities. Introduces the basic financial accounting concepts, principles, and practices applied to the preparation and interpretation of the major financial statements. Takes a business process approach to the information requirements of external decision makers.

ACCT 201 Accounting Principles I 3c-0l-3cr

Prerequisite: Sophomore status (except for accounting majors)
Introduces the basic financial accounting concepts, principles, and practices applied to the preparation and interpretation of the major financial statements. Includes complete coverage of the accounting cycle, which will satisfy the information requirements of external decision makers. Topics covered are: asset valuation, liability measurement, income determination, and equity activities. Integrated throughout is a discussion of ethical issues and considerations.

ACCT 202 Accounting Principles II 3c-0l-3cr

Prerequisite: ACCT 201
Introduces traditional managerial accounting concepts and procedures utilized in the organization and processing of accounting information for management decision-making purposes. Topics include managerial accounting and the business environment, cost terms and concepts, cost systems, cost behavior, and cost-volume-profit analysis. Also covers the master budget, standard costing and variance analysis, performance evaluation, responsibility accounting, relevant cost analysis, and decision making.

ACCT 303 Financial System Analysis 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 202
Focuses on preparation and analysis of financial information for business performance and financial condition decisions. Financial accounting software is integrated throughout to demonstrate financial accounting system design. Basic accounting standards, concepts, and current issues underlying financial reporting are reviewed.

ACCT 304 Intermediate Accounting I 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 202
Primarily focuses on financial reporting for asset wealth typically found in business environments. Coverage includes recognition and measurement of such assets as cash, receivables, investments, inventories, plant assets, and intangible assets. Present value concepts in financial reporting are also emphasized.

ACCT 305 Intermediate Accounting II 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 304
Concentrates on financial reporting of creditor and investor claims on business assets in the form of liabilities and equity. Specialized financial reporting topics such as earnings per share, stock options, income tax, pension, and lease accounting are also covered.

ACCT 311 Cost Accounting 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 202
Studies the aggregation and use of financial information for internal management decision making. Discussions concentrate on cost management system design, cost estimation methods for budget preparation and achievement, cost accumulation methods for manufacturing and service organizations, inventory control procedures, transfer pricing administration, and managerial performance evaluation techniques.

ACCT 399 Cooperative Education II 0c-0l-3cr

Prerequisites: ACCT 299, completion of 85cr with a cumulative 2.0 GPA, a 2.3 GPA in ACCT 304, 305, and 311 with a grade of "C" or better in each course, and approval of the cooperative advisor
The subsequent course in cooperative education combines classroom theory with practical application through job-related experiences. Students are actively employed in the accounting area in business, industry, government, and a variety of organizations and agencies with a work focus that relates to their academic training and career objectives in accounting.

ACCT 401 Advanced Accounting 3c-0l-3cr

Prerequisite: ACCT 305
A study of accounting issues of specialized nature including partnerships, organization and liquidation, agency and branch accounting, accounting for business combinations, preparation of consolidated financial statements, accounting for government and not-for-profit entities, accounting for estates and trusts, and receivership accounting.

ACCT 412 Advanced Cost Accounting 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 311
A study of budgets, standard costs, direct and absorption costing, analysis of cost variances, and extensive analysis of various cost control and profit planning programs.

ACCT 421 Federal Tax I 3c-0l-3cr

Prerequisite: Grade of "C" or better in ACCT 202
Introduces the fundamental concepts of federal taxation, with special emphasis on individuals. Creates an awareness and recognition of the tax consequences involved in financial decision making, with special emphasis on use of professional tax software and Internet resources.

ACCT 422 Federal Tax II 3c-0l-3cr

Prerequisite: ACCT 421
Introduces the fundamental concepts of federal taxation of corporations, partnerships, estates, and gift transactions. Creates an awareness and recognition of the tax consequences involved in financial decision making, with special emphasis on use of professional tax software, the Internal Revenue Code and Regulations, and Internet research.

ACCT 431 Auditing 3c-0l-3cr

Prerequisite: ACCT 304
A study of auditing theory and practical application of auditing standards and procedures to the review, testing, and evaluation of accounting controls and to the verification of transactions and balances to express an opinion in an audit report on the fairness of financial statements' presentation.

ACCT 432 Forensic and Internal Auditing 3c-0l-3cr

Prerequisite: ACCT 431
Introduces forensic auditing in fraudulent financial reporting and employee theft. Also covers the foundation of internal auditing and operational audits performed by internal auditors.

ACCT 441 Accounting for Government and Nonprofit Organizations 3c-0l-3cr

Prerequisite: ACCT 305
Presents the views of authoritative professional organizations as to desirable standards of accounting and reporting for governmental and nonprofit entities. Topics include budgeting and budgetary accounts, accounting for various funds, the general fixed assets group of accounts, the financial reporting process, and application of the principles of fund accounting in specific areas.

ACCT 451 Seminar in Accounting Standards 3c-0l-3cr

Prerequisite: ACCT 305
A study of professional standards having authoritative support in the field of accounting. APB opinions, FASB interpretations, and SEC Accounting Series Releases are discussed.

ACCT 461 Accounting Systems**3c-0l-3cr****Prerequisites:** ACCT 305, 311, IFMG 300

A study of concepts, principles, and procedures of accounting system design, installation, implementation, auditing, and maintenance in relating to system objectives, information requirements, constraints, system elements, and considerations on a computerized basis.

ACCT 475 Accounting for the Oil and Gas Industry**3c-0l-3cr****Prerequisites:** ACCT 201 and 202, or equivalent

An introduction to the accounting theory, practices, and reporting requirements for the oil and gas industry. The significance of the industry in a global economy and the impact on International Financial Reporting Standards are addressed.

ACCT 482 Independent Study**var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students, with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

ACCT 493 Internship in Accounting**var-3-6cr**

Prerequisites: Approval of the Eberly College of Business and Information Technology internship coordinator, department chairperson, and dean. Must have completed a minimum of 90cr (18cr in ACCT) with a cumulative GPA of 2.75 and 3.00 GPA within the major.

A supervised learning experience that integrates the student's academic background with practical experience related to the students' major area of interest. The number of credits earned depends on the nature of the job and the amount of time involved in the internship.

ACE: Adult and Community Education
Department of Adult and Community Education
College of Education and Communications

ACE 103 Digital Instructional Technology**3c-0l-3cr****Prerequisite:** Education major

Introduces freshman preservice teachers to the ever-changing world of digital instructional technology. Learners are exposed to computer-based tools of the trade used by teachers in the delivery and management of instruction. Does not count toward credits needed for communications media major. (Offered as COMM 103 before 2017-18.)

ADVT: Advising and Testing
Department for Disability Access and Advising
Division of Student Affairs

ADVT 170 Career Exploration**1c-0l-1cr**

Introduces the theoretical and practical framework with which to explore careers compatible with overall academic skills, aptitudes, and life goals. Students examine the world of work, assess their interests and abilities, and make realistic decisions on academic majors and careers. Notes: (1) Certain sections of this course will be restricted to specific enrollment groups. (2) Cross-listed as DVST 170. These courses may be substituted for each other and be used interchangeably for D/F repeats but may not be counted for duplicate credit.

ANTH: Anthropology
Department of Anthropology
College of Humanities and Social Sciences

ANTH 110 Contemporary Anthropology**3c-0l-3cr**

An introduction to the discipline of anthropology: the study of human beings through time and across cultures. This class is organized around select themes that allow students to explore the nature and relevance of anthropological methods, theories, and perspectives. These themes may include, but are not limited to, human origins, evolution and human behavior, gender roles, the links between environment and culture, and social stratification. A strong emphasis on the effects of globalization on human cultures, and the

potential for anthropology research to address contemporary issues such as cultural and environmental sustainability, public health, and social equity.

ANTH 211 Cultural Anthropology**3c-0l-3cr**

Introduces the major concepts, theories, and research methods of cultural anthropology that are used to study and understand human culture in different parts of the world. An emphasis given to how traditional and nontraditional cultures undergo change as a result of globalization, and how cultural anthropologists study the social, economic, and political consequences that result from integration into an expanding and changing global economy. Topics covered may include, but are not limited to, social organization, economics, power and politics, race and ethnicity, language and communication, technology, religion and ritual, and sex and gender. A wide geographic coverage provides a basis for global comparisons of cultural similarities and differences among human societies.

ANTH 213 World Archaeology**3c-0l-3cr**

Archaeology is the study of past cultures and societies through their material remains. Explores the archaeologies of Western and non-Western societies and examines theory, methods, and techniques for investigating, reconstructing, interpreting, preserving, and learning from the past. Examines human cultural chronology from the appearance of human ancestors to the present through an examination of important social, economic, and ideological questions, as well as artifact remains. Includes the origins of food production, social inequality, and civilization.

ANTH 222 Biological Anthropology**3c-0l-3cr**

An introduction to the goals and techniques of biological anthropology with an emphasis on primatology, paleoanthropology, genetics, and osteology. Provides a basis for evaluating the role of biology in human behavior.

ANTH 233 Language and Culture**3c-0l-3cr**

Focuses on social and cultural functions of language. Particular emphasis given to problems in anthropology with respect to non-Western languages.

ANTH 240 Introduction to Global Health**3c-0l-3cr**

Explores the interdisciplinary study of global health and its relevance in our age of globalization as local medical systems are transformed by international integration. Defines the scope of global health and explores the methods of the subfield by utilizing ethnographic, theoretical, anthropological, and sociological readings to critically analyze the various factors that have contributed to the development of this global system. Investigates the relationship between culture and disease, different reproductive health practices, medical ethics, environmental factors in health, and social health disparities. Extends critical analysis to existing health systems across the globe and seeks ways for a positive role in supporting healthy individuals and communities.

ANTH 244 Basic Archaeology**3c-0l-3cr**

An introduction to the goals and methods of anthropological archaeology, with particular attention to the analysis of cultural chronology, past lifeways, and cultural process. Provides laboratory experience with artifacts and other archaeological data.

ANTH 250 Human Origins**3c-0l-3cr**

Offers a detailed and critical review of what has been learned to date about the origin and evolution of human morphology and behavior. Introduces students to the many human-like species ("hominins") that preceded the emergence of our own species (*Homo sapiens*), and examines the range of methods used by scientists to study human evolution. It also addresses a number of relevant and controversial issues, such as what it means to be "human," the extent and nature of present-day human variation, and whether *Homo sapiens* are still evolving.

ANTH 271 Cultural Area Studies: Africa**3c-0l-3cr**

Critically evaluates media headlines about African issues and reaches beyond these headlines to appreciate the complexity and diversity of people's lives in sub-Saharan Africa and the diaspora. Course readings, assignments, and ethnographic films explore the nature of anthropology research in Africa, the impact of colonialism on social and political life, and the contemporary struggles of people to define their place in local, national, and

global communities. Readings include ethnographic, historical, and popular accounts, as well as selections by African writers on issues of contemporary society, such as wildlife conservation, resource extraction, post-conflict development, food aid, and refugee relief and resettlement.

ANTH 272 Culture Area: China 3c-0l-3cr

A broad introduction to Chinese culture and society from an anthropological perspective. Following an overview of China's geography and history, the course covers a range of topics pertaining to Chinese traditional culture, including marriage, family, education, governance, gender, religion, language, health, art, and music. Relies on cross-cultural comparisons to help locate Chinese culture and customs within a broader worldwide context. Also encourages students to consider the transformation (rather than elimination) of traditional cultural elements as globalization has come to play an increasingly important role in China's social and economic development.

ANTH 273 Cultural Area Studies: Southeast Asia 3c-0l-3cr

Introduces the peoples and cultures of mainland and island Southeast Asia. Traces prehistory and the development of indigenous states in the area and impact of world religions, trade, and Western colonialism. Themes include the state, violence, marginality, and gender. Issues include ethnic minority tribal peoples, tropical deforestation, gender, effects of genocide, art and tourism, and migration.

ANTH 274 Cultural Area Studies: Latin America 3c-0l-3cr

An overview of the diverse societies of Latin America from the perspectives of anthropology and Latin American studies. Through a historical, cross-cultural, and comparative approach, it explores the cultural, economic, political, and social life in many societies of this large and diverse region and transnational nature of many of these societies as a result of globalization. Themes covered are: race, ethnicity, and gender as they appear in Latin America, political and economic processes, rural underdevelopment and urbanization, transnational movement and cultures, religion, and indigenous social movements.

ANTH 310 Voyages of Discovery 3c-0l-3cr

Focuses on human diasporas through key explorations and explorers, spanning the period from 40,000 years ago to the late 19th century and touching on every inhabited continent. Through these voyages of discovery, it addresses the diffusion of ideas, the migration of peoples, technological development and its role in culture change, and the historical and cultural circumstances involved in geographic expansion. Cultures from across the globe and throughout time are discussed in terms of their expansion and their responses to the expansion of other cultures. Discusses the historical roots of globalism and its archaeologically visible results.

ANTH 314 Contemporary Native American Cultures 3c-0l-3cr

Introduces Native American cultures of North America north of Mexico from an anthropological perspective with an emphasis on historical and contemporary cultural diversity. Emphasizes the history of culture change and continuity as well as current political, economic, and cultural issues among the Native nations of the United States and Canada.

ANTH 315 North American Archaeology 3c-0l-3cr

Prerequisite: ANTH 110 or 244 or instructor permission

A survey of North American prehistory with an emphasis on cultural ecology and technology. Attention is given to all geographic areas north of Mexico, but the focus is on the Eastern Woodlands.

ANTH 316 Anthropology of Religion 3c-0l-3cr

Prerequisite: ANTH 110 or 211

Explores nature, function, and universal characteristics of religion in human society by utilizing cross-cultural approach. Theories concerning religious phenomena serve as topics for discussion.

ANTH 318 Museum Methods 3c-0l-3cr

Prerequisite: ANTH 110 or 211 or 244

Lecture and laboratory course surveying the role of museums as social and educational institutions, types of museums, museum administration, and museum architecture. Procedures for collection, curation, preservation, and storage of anthropological and natural history specimens examined.

ANTH 320 Archaeological Field School var-6cr

Prerequisites: ANTH 110, 244, or instructor permission

An introduction to archaeological survey, field excavation, and laboratory processing. Field school students participate in one or more of the ongoing research projects of the IUP archaeology program.

ANTH 323 Mesoamerican Archaeology 3c-0l-3cr

An introduction to the archaeology of Mesoamerica, which explores the natural and cultural diversity of the area south of the United States and north of lower Central America. Surveys the history of archaeological research in Mesoamerica and examines some of the specific methods of archaeological research that are unique to Mesoamerican archaeology. The focus is on three areas: the Gulf Coast and the Olmecs, the Valley of Mexico and its long history of settlement from the Tehuacan Valley through the Aztecs, and the southern Highlands and Lowlands inhabited by the Maya, although other regions of Mesoamerica are also discussed.

ANTH 325 Archaeological Lab Methods 3c-0l-3cr

Prerequisite: ANTH 244

A hands-on introduction to the study of artifacts and other cultural materials recovered from archaeological excavations. Experience the specific methods of analysis in archaeological lab settings, focusing on the analysis of stone artifacts, pre-Columbian ceramics, and historic artifacts. Analytic techniques include classification, quantification of attributes, and reporting of the results of the analyses.

ANTH 333 The Archaeology of Early China 3c-0l-3cr

An overview of the history, practice, and achievements of archaeology in China, with a focus on early China (up to the Han dynasty). A portion of the course is devoted to those discoveries that have shed light on important developments in China, including its early stone age occupation, the growth of agriculture, the emergence of civilization, as well as the construction of impressive structures (such as the Great Wall and the first emperor's terracotta army). Also discusses the ways in which Chinese and Western archaeology differ, as well as the role which nationalism and regionalism have played in archaeological research and interpretation in China.

ANTH 340 Anthropology of Aging 3c-0l-3cr

Introduces various experiences faced by elderly people in numerous world societies. Explores the impact of such factors as ethnicity, nationality, race, and class and the processes of cultural change on the lives of people growing old. Comparative, cross-cultural perspectives are stressed.

ANTH 350 Anthropology of Gender 3c-0l-3cr

Explores the primary category of social difference into which humans are universally socialized, which is the gendered nature of women's and men's experiences in the world from an anthropological perspective. An introduction to cross-cultural experiences of gender, and the social constructions of gender. Readings focus on the intersection of race, class, sexuality, and gender, and the impact on gender of technology, colonization, globalization, and the nation-state. Considers the experiences of men and women around the world from various frameworks, including reproductive, social, economic, post-colonial, and post-structural.

ANTH 352 The Anthropology of Human Rights 3c-0l-3cr

Engages the concept of human rights as applied to situations in the contemporary world. Takes an interdisciplinary approach, with an emphasis on anthropology to examine the following principal questions: (1) What are the historical origins of contemporary ideas about human rights? (2) What are some of the foremost human rights situations in the world today? (3) What are the political, economic, and cultural contexts in which human rights abuses occur? (4) What is the role of the committed (i.e., activist) anthropologist? Focuses on the interplay between the abuse of human rights, power, and culturally constructed difference, such as ethnicity and gender. Extends contemporary interpretations to existing social and political problems around the world to seek ways in which anthropologists can have a positive role to play in finding solutions to those problems.

- ANTH 360 Applied Anthropology** **3c-0l-3cr**
Applied anthropology focuses on the anthropologist as an agent of social change and bridges the gap between theories of cultural behavior and the policies that affect contemporary cultures. Examines the historical role of anthropologists in early public administration and then examines at length the work of contemporary applied anthropologists in programs of international economic development (health, agriculture, and education), in domestic human service planning and delivery, in cultural resource preservation, and in their role as advocates for unempowered minorities.
- ANTH 365 Native North American Religions** **3c-0l-3cr**
An introduction to the indigenous religions of North America and to the peoples who practice these rich and varied approaches to the sacred. Not only examines major religious themes and dimensions (myth, ritual, ethics, etc.), but includes a historical perspective on Native North American life-ways. This perspective involves discussion of the clash with Euro-American values and contemporary native religious responses to social crisis and change. (Also offered as RLST 365; may not be taken for duplicate credit.)
- ANTH 370 Latinos and Diasporas** **3c-0l-3cr**
Introduces students to the global and local dimensions of the changing Latino communities in the United States and examines the communities' multiple connections and dynamic interactions with Latin American diasporas. Toward this end, the course covers (1) theories on transnational communities, diasporas, the state, and citizenship; (2) Latino cultures and geography; (3) Latin American immigration and labor migration to the United States; and (4) the impact of Latin American diasporic networks on Latino and non-Latino communities. (Cross-listed as LAS 370.)
- ANTH 415 Cultural Resource Management** **3c-0l-3cr**
Prerequisite: ANTH 244 or instructor permission
Provides an understanding of how cultural resources are being preserved and managed under current American laws and regulations with particular emphasis on historic properties, such as historic buildings and archaeological sites. Case studies and field trips are incorporated so that students gain a thorough understanding of key problems and issues in historic preservation and cultural resource management.
- ANTH 420 Environmental Anthropology** **3c-0l-3cr**
Prerequisite: ANTH 110 or 211
Introduces environmental anthropology, the study of the relationship between the natural environment and human social and cultural life. Illustrates the importance of understanding human-environment interactions in studying contemporary issues in global development, and in investigating the past. Explores major analytical and methodological approaches in environmental anthropology, including ecological anthropology, ethnoecology, political ecology, and environmental justice. (Titled Cultural Geography before 2016-17.)
- ANTH 425 Archaeological Theory and Research Design** **3c-0l-3cr**
Prerequisites: ANTH 244, 325
Reviews the broad range of field, analytical, and interpretive methods adopted by archaeologists over the past century and guides students through the design and implementation of a research project of their own. Discussed against the backdrop of the discipline's constantly shifting theoretical setting, this survey also prepares students for the task of critically assessing published research conducted by other archaeologists and locating such research within this dynamic theoretical landscape.
- ANTH 430 Anthropology of Food** **3c-0l-3cr**
Focuses on the influences of biology, culture, political economy, and history on what and how peoples of the world eat. Readings, lectures, films, and projects link the dietary implications of foraging, crop domestication, state formation, and industrial capitalism to food choices and health. Examines various sociocultural practices relating to the uses of food in marking social difference, maintaining social relationships, and dealing with cultural constructions of health, illness, and the body. Considers the influence of the agricultural revolution, colonization, and globalization on the transformation of food meanings, practices, and availability.
- ANTH 444 Medical Anthropology** **3c-0l-3cr**
Prerequisites: ANTH 110, 211, SOC 151 or 161 or permission
Focuses on the study of human confrontation with disease and illness and on the adaptive arrangements made by various human groups for dealing with these dangers. Health and disease are viewed from a broad array of micro and macro perspectives, e.g., evolutionary, ecological, and psychosocial. For nursing and social work students as well as social and biological science students.
- ANTH 450 Health Disparities** **3c-0l-3cr**
Prerequisite: SOC 151 or ANTH 211 or with instructor permission
Explores health status and healthcare disparities across groups based on race/ethnicity, gender, socioeconomic status/social class, nativity, refugee and citizen status, and other cultural and demographic characteristics. Uses a social determinants of health perspective to consider how social, cultural, environmental, political, and economic conditions produce unequal and inequitable health outcomes, with special focus on disadvantaged populations. Addresses agency and empowerment of populations seeking and accessing health and health care. Includes different levels of public health interventions that can improve health outcomes, better calibrate access to health care, and improve health equity within populations. (Also offered as SOC 450; may not be taken for duplicate credit.)
- ANTH 456 Ethnographic Research Methods** **3c-0l-3cr**
Prerequisite: 9cr in ANTH
Provides a background in qualitative and quantitative techniques used in anthropological research. Concentrates on the ethics of research with people, formulation of hypotheses, design and use of appropriate research techniques, and data analysis. Emphasizes development of field notes, interviewing techniques, developing genealogies, and participant observation.
- ANTH 460 Ethnographic Field School** **6c-0l-6cr**
Prerequisite: ANTH 456 or instructor permission
Ethnographic research training in the field. Emphasizes the application of qualitative research methods, the recording of data in research journals and the maintaining of field diaries, the categorizing and organizing of data, and the writing of research reports.
- ANTH 480 Anthropology Seminar** **var-1-3cr**
Prerequisite: 9cr in ANTH or permission
A seminar approach to the integration of the fields of anthropology. Assists the advanced student in understanding the nature of anthropology, the major theoretical issues, and the history of intellectual development.
- ANTH 481 Special Topics** **var-1-6cr**
Special topics courses are offered on an experimental or temporary basis to explore topics that are not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.
- ANTH 482 Independent Study** **var-1-3cr**
Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with an interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.
- ANTH 483 Honors Thesis** **var-1-6cr**
Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.
- ANTH 484 Specialized Methods in Archaeology** **3c-0l-3cr**
An opportunity to learn specialized techniques and approaches presently in use in archaeology. In any one semester, the course concentrates on one of a range of possible themes, including lab methods, field methods, statisti-

cal methods, computer applications, or text-based approaches. The specific topic varies but focuses on instructing in the mechanics of the selected technique, its application to real archaeological problems, and the interpretation of the results. May appeal to students from other disciplines who wish to gain applied expertise in a topic that is relevant to their own field of study. Interested students should contact the instructor to find out which topic will be taught in any one semester. May be repeated for credit under a different methods title.

ANTH 486 Historic Artifacts 3c-0l-3cr

Focuses on techniques for collecting, analyzing, and interpreting data from historic period (1500 to present) artifacts commonly found on North American archaeological sites. Analytic techniques, including classification, quantification of attributes, relating artifact patterns to human activities, and statistical interpretation are taught in a hands-on environment. Outlines the history of technology as a means to identify the age and use of artifacts. Considers that all objects occurred as a thought before they were made material and how to work backwards from the material to the thought.

ANTH 487 Geoarchaeology 3c-0l-3cr

Prerequisite: ANTH 244 or GEOS 201, or instructor permission
Surveys geological methods and techniques used to investigate archaeological research questions. Includes sedimentary and geomorphic processes affecting the formation and preservation of archaeological sites; methods of paleoenvironment and paleoclimate reconstruction, and radiometric dating techniques. Illustrates the importance for archaeologists to understand the geological processes that affect archaeological sites—before, during, and after people have been there. Understanding these processes is crucial to accurately reconstructing the dynamics of human behavior.

ANTH 488 Geophysical Applications in Archaeology 3c-0l-3cr

Provides the methodological and technological knowledge to apply various geophysical systems used in archaeological investigations. These systems may include, but are not limited to, Ground-Penetrating Radar, Magnetometry, Electrical Resistivity, Conductivity, and Susceptibility.

ANTH 489 Prehistoric Technologies of Eastern North America 3c-0l-3cr

Introduces the prehistoric technologies of Eastern North America. Focuses on the material culture commonly recovered from pre-European Contact Native American archaeological sites, including stone, ceramic, bone, and native metal artifacts. Includes analytical techniques of classification, quantification, and interpretation linking artifacts to human behavior.

ANTH 490 Applied Spatial Methods in Archaeology 3c-0l-3cr

Prerequisite: ANTH 244 or instructor permission
Introduces methods used within archaeology to examine the spatial relationships between archaeological artifacts, features, and sites at various scales. Explores the strengths and weaknesses of various spatial methods in archaeology. Provides students with the ability to become knowledgeable consumers of these methods in future research and working environments.

ANTH 491 Zooarchaeology 3c-0l-3cr

Introduces the archaeological specialty of zooarchaeology, which is the study of human-animal interactions through the analysis of archaeological remains from archaeological sites. Explores the basics of vertebrate osteology through lectures and hands-on exercises, as well as the nature of various types of zooarchaeological interpretation such as studies of hunting and butchering practices, dietary importance, seasonality, domestication, paleopathology, and past environment.

ANTH 492 Soil Science: Archaeological and Geoenvironmental Applications 3c-0l-3cr

Introduces the ways in which archaeologists and geoscientists define, recognize, examine, and interpret soils in both the field and the laboratory. Examines (1) how the interactions of landform, topography, climate, and biota result in patterns of soil development and the distribution of soils that we observe within the landscape; (2) the significance of soils to other disciplines, including archaeology, quaternary geology, and geoenvironmental science; and (3) how the physical, chemical, and biological properties of soils are influenced by human activities, both past and present. Includes

field trips that may occur on weekends. (as GEOS 492; may not be taken for duplicate credit.)

ANTH 493 Internship in Anthropology var-3-12cr

Prerequisite: Instructor permission

Offers practical experience in any of the specialized fields of anthropology (physical, social-cultural, archaeology, or linguistics). Each student develops objectives in consultation with a particular departmental faculty member who is supervising the internship. Detailed field notes and a major paper based on the experience are required.

APMU: Applied Music Department of Music College of Fine Arts

APMU Applied Music (Major Area)

Instrument/Voice I-VIII

var-2 or 4cr

Prerequisites for initial semester of study: Audition and acceptance to the area of concentration

Prerequisite for subsequent semesters: Grade of "C" or better in the previous semester of study

Private instrumental, vocal, or composition instruction for music majors in their primary area of concentration for up to eight semesters (four in composition). Includes technical studies, musical repertoire, and performance experiences at the professional level. Weekly half-hour lessons are given (2cr) for students enrolled in the BS and BA degree programs. Weekly one-hour lessons (4cr) are given for students enrolled in the BFA degree program only.

APMU Applied Music (minor area)

Instrument/Voice I-VIII

var-1cr

Prerequisites for initial semester of study: Audition and placement

Prerequisite for subsequent semesters: Grade of "C" or better in the previous semester of study

Private instrumental or vocal instruction for music minors, or for music majors in their secondary or tertiary area of concentration for up to four semesters. Includes technical studies, musical repertoire, and performance experiences at a functional level. Students enroll for 1 credit and are given weekly half-hour lessons. Students may enroll in Levels I-IV only from the following list.

APMU 101, 151, 201, 251, 301, 351, 401, 451	Piano I-VIII
APMU 102, 152, 202, 252, 302, 352, 402, 452	Organ I-VIII
APMU 103, 153, 203, 253	Harpichord I-VIII
APMU 104, 154, 204, 254, 304, 354, 404, 454	Harp I-IV
APMU 105, 155, 205, 255, 305, 355, 405, 455	Voice I-VIII
APMU 106, 156, 206, 256, 306, 356, 406, 456	Violin I-VIII
APMU 107, 157, 207, 257, 307, 357, 407, 457	Viola I-VIII
APMU 108, 158, 208, 258, 308, 358, 408, 458	Cello I-VIII
APMU 109, 159, 209, 259, 309, 359, 409, 459	String Bass I-VIII
APMU 110, 160, 210, 260, 310, 360, 410, 460	Flute I-VIII
APMU 111, 161, 211, 261, 311, 361, 411, 461	Clarinet I-VIII
APMU 112, 162, 212, 262, 312, 362, 412, 462	Oboe I-VIII
APMU 113, 163, 213, 263, 313, 363, 413, 463	Bassoon I-VIII
APMU 114, 164, 214, 264, 314, 364, 414, 464	Saxophone I-VIII
APMU 115, 165, 215, 265, 315, 365, 415, 465	Trumpet I-VIII
APMU 116, 166, 216, 266, 316, 366, 416, 466	French Horn I-VIII
APMU 117, 167, 217, 267, 317, 367, 417, 467	Trombone I-VIII
APMU 118, 168, 218, 268, 318, 368, 418, 468	Euphonium I-VIII
APMU 119, 169, 219, 269, 319, 369, 419, 469	Tuba I-VIII
APMU 120, 170, 220, 270, 320, 370, 420, 470	Percussion I-VIII
APMU 121, 171, 221, 271, 321, 371, 421, 471	Guitar I-VIII
APMU 125, 225, 325, 425	Composition I-IV

APMU 126 Piano Proficiency Level I

0c-0l-0cr

Corequisite: MUSC 154 or APMU 151

Adjudicates the performance of students in piano (on a pass/fail basis) as partial fulfillment of the requirements for the BA, BFA, and BSEd music degree programs. In order to pass the Level I jury, students are expected to attain a basic level of piano proficiency. (Offered as APMU 124 before 2016-17.)

APMU 127 Piano Proficiency Level II**0c-0l-0cr****Corequisite:** APMU 251

Adjudicates the performance of students in piano (on a pass/fail basis) as partial fulfillment of the requirements for the BSEd—Music program. In order to pass the Level II jury, students are expected to attain an intermediate level of piano proficiency. (Offered as APMU 123 before 2016-17.)

APMU 227 Capstone Jury: Secondary Instrument**0c-0l-0cr****Prerequisite:** Must be taken during the fourth semester of APMU Applied Music (secondary instrument)

Adjudicates the performance of students in a secondary performance area (on a pass/fail basis). To pass the secondary jury, students are expected to perform at a functional level. All students who undertake four semesters of secondary applied study must complete a capstone jury, but those in the BSEd—Music program with a voice concentration take APMU 127 in lieu of 227.

APMU 427 Capstone Jury: Primary Instrument**0c-0l-0cr****Prerequisite:** Must be taken during the final semester of APMU Applied Music (primary instrument) required by program

Adjudicates the performance of students in their respective primary performance area (on a pass/fail basis) as partial fulfillment of the requirements for the BA, BFA, and BSEd music degree programs. To pass the primary jury, students are expected to perform at a professional level. (Offered as APMU 122 before 2016-17.)

APMU 480 Wind and Percussion Pedagogy**2c-0l-2cr****Prerequisites:** Completion of six semesters of APMU at the 4cr level; concurrent enrollment with seventh or eighth semester of APMU, or instructor permission

The study of specific techniques of, and pedagogical approaches for, woodwind, brass, or percussion instruments in both individual and classroom situations.

ARED: Art Education
Department of Art
College of Fine Arts
ARED 281 Special Topics**var-1-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

ARED 315 Issues of Art in K-12 Programs**3c-0l-3cr**

An overview of art education within K-12 programs. Requirements and responsibilities of art teachers are explored in the context of becoming a professional educator. Curriculum and assessment issues pertaining to state standards are examined. Various populations of students, as well as various teaching contexts, are featured in lectures, readings, and discussions. Art teaching is viewed as a dynamic discipline as contemporary issues within art, art education, and general education are studied. Also provides information regarding the teaching of art with special needs populations.

ARED 317 Art in K-6 Programs**3c-0l-3cr****Prerequisite:** Admission to Step 1 of the 3-Step Process

Examines children's artistic development in relation to teaching art in K-6 settings. Explores types of art programs, planning, motivation, content, and evaluation of art lessons for all students in elementary art classes, including those with special needs. Students apply theories and knowledge to the design of instructional curricula, units, and lessons, as well as practice and critique the delivery of instruction.

ARED 318 Art in 7-12 Programs**3c-0l-3cr****Prerequisite:** Admission to Step 1 of the 3-Step Process

Explores a number of practical and theoretical approaches related to the teaching of studio art in 7-12 public school settings. Of primary interest is the potential for application of college-level art theories and techniques, along with exploring a variety of research writing techniques. Also provides information regarding the teaching of art with special needs populations.

ARED 320 Art Criticism and Aesthetics in K-12**Programs****3c-0l-3cr**

Prerequisites: ARED 315 (minimum C grade) and art education major
Secure the knowledge and skills necessary to teach a program of comprehensive art that includes the discipline of art criticism. Establishes theoretical frameworks for writing intelligently and talking about art with students from a critical perspective. Also provides opportunities for developing curricular and pedagogical materials appropriate for teaching art K-12.

ARED 321 Art History Inquiry for K-12 Art Programs**3c-0l-3cr**

Prerequisites: ARED 315 (minimum C grade) and art education major
Explores methods, media, and activities that integrate art history content into the school art curriculum. Students plan and execute lessons that are appropriate at various grade levels and that emphasize art history and knowledge of artistic diversity worldwide. Students prepare one unit on a selected theme, in addition to other written or artistic assignments. Preparation of art history-related projects and instructional materials for classroom use are also components.

ARED 322 Studio Inquiry for K-12 Programs**3c-0l-3cr**

Prerequisites: ARED 315 (minimum C grade) and art education major
Art processes, media, and techniques suitable for teaching art to elementary and secondary students are examined and researched as modes of learning and creating. A major focus is on developing curricula and pedagogical materials relating to the theory and practice of teaching art, as well as integrating studio experiences with art criticism, art history, and aesthetics. Students apply demonstrated techniques and processes to sample projects and combine these with research into a portfolio for teaching studio art within comprehensive art lessons.

ARED 482 Independent Study**var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

ARHI: Art History
Department of Art
College of Fine Arts
ARHI 100 Arts of the 20th Century**3c-0l-3cr****Prerequisite:** Art majors and minors only

A study of art in the US during 1900-1960 in light of historical events and in the broader context of political, philosophical, religious, and social developments, including women and underrepresented groups as subjects, creators, and patrons of the arts. An introductory course for incoming art majors. Primary focus on painting, photography, and film.

ARHI 101 Introduction to Art**3c-0l-3cr**

Introduces the elements of visual expression, past and present. Students gain an understanding of the processes of art making and the motivations and goals of artists across time. Students learn how various factors, including religion, politics, and literature, affect the creation of the arts of any given period or region.

ARHI 205 Ancient to Medieval Art**3c-0l-3cr**

Examines a selection of art and architectural forms from the Prehistoric period through the late Middle Ages, in relation to the political, social, economic, and religious forces that have shaped Western cultures.

ARHI 207 Renaissance through Modern Art**3c-0l-3cr**

Studies art from the Renaissance through the Modern periods in western Europe in light of historical events and in the broader context of political, philosophical, religious, and social developments, including women and underrepresented groups as subjects, creators, and patrons of the arts. Issues of exoticism, Orientalism, and colonialism are discussed.

ARHI 224 Introduction to Asian Art**3c-0l-3cr**

Examines a selection of art and architectural forms from China, Japan, and India, ancient and modern. Students are introduced to religious and secular

sculpture, painting, and ceramics, as well as the philosophical, political, and social forces that prompted their creation.

ARHI 321 History of World Ceramics **3c-0l-3cr**

Analyzes the development of ceramics from its beginnings to the present. Emphasizes the historical and social context and changing aesthetics of ceramic production, with special focus on the pottery of East Asia and Islamic cultures.

ARHI 407 Medieval Art **3c-0l-3cr**

Art and architecture of Europe during the Middle Ages, beginning with early Christian and Byzantine and concluding with the Gothic period. Dual listed for graduate credit as ARHI 507.

ARHI 408 Italian Renaissance Art **3c-0l-3cr**

Italian art from 1400s through 1650 and Mannerist movement. Special attention paid to great masters of the period. Dual listed for graduate credit as ARHI 508.

ARHI 409 Baroque and Rococo Art **3c-0l-3cr**

A general survey of art from 1575 to 1775, includes architecture, sculpture, painting, and other arts. Dual listed for graduate credit as ARHI 509.

ARHI 410 19th-Century European Painting **3c-0l-3cr**

Prerequisite: Junior standing or instructor permission

Surveys the history of Western painting from the late 18th century to the turn of the 20th. The styles and movements covered range from neo-classicism to romanticism, realism, the Pre-Raphaelite painters, impressionism, symbolism, and post-impressionism. French painting is most heavily represented. Activities include lecture mixed with discussion of readings, debates about issues, practice in “reading” images, and others.

ARHI 411 20th-Century European Art **3c-0l-3cr**

Studies 20th-century painting, sculpture, photography, and film in France, Germany, and Italy in light of historical events and in the broader context of political, philosophical, religious, and social developments, including women and underrepresented groups as subjects, creators, and patrons of the arts.

ARHI 412 Classical Art **3c-0l-3cr**

A historical survey of the architecture, painting, sculpture, and minor arts of the classical period of Greece and Rome, including the Minoan, Mycenaean, and Etruscan cultures.

ARHI 413 Senior Seminar **3c-0l-3cr**

Helps students develop adequate vocabularies and methods to be used in discussion and criticism of works of art.

ARHI 416 Northern Renaissance Art **3c-0l-3cr**

Explores phenomena of art north of the Alps from 1400 to 1600, especially as it appears in the Lowlands, as well as side explorations into art of France, Germany, Austria, and the court at Prague.

ARHI 417 Byzantine Art **3c-0l-3cr**

Prerequisite: ARHI 205 or instructor permission

Investigates the art and architecture produced in the Byzantine Empire, with a concentration on the years between 324, the year Constantine founded Constantinople, and 1453, the date the Turks conquered the city. Consisting of lectures, discussions, videos, and field trips, the course emphasizes cross-cultural contacts between Byzantium, Islam, and the West.

ARHI 418 African Art **3c-0l-3cr**

Explores the aesthetics and meanings of African art through a historically and culturally based survey of art from selected African cultures. Examples of sculptures, masks, and other ritual objects, tools and utilitarian objects, clothing, jewelry and adornment, painting, and architecture from across the continent are studied. Philosophical and religious beliefs, socioeconomic, historical, and political forces are examined as to how they have affected the creation of art in traditional and contemporary Africa. Connections between the visual arts and the other fine arts are an integral part of the study as well.

ARHI 423 Art of Japan **3c-0l-3cr**

Introduces the history and aesthetics of Japanese art, from antiquity to the present. Lectures focus on major works of painting, sculpture, architecture, prints, ceramics, and other works from antiquity to present. Close attention is paid to their historical contexts and underlying themes. These include religious influences, the imperial court, the tea ceremony, and modern life. The interaction of Japan with its neighbors is also considered.

ARHI 424 Art of India and Southeast Asia **3c-0l-3cr**

Analyzes the arts of India and Southeast Asia, past and present. Examines representative examples from major periods, emphasizing the cultural, political, and/or religious context of the work.

ARHI 425 Arts of China **3c-0l-3cr**

Surveys art selected from the five millennia of Chinese art and culture. Examines sculpture, architecture, and painting from the Neolithic period through the 20th century. Issues of religion, patronage, and popular culture are included.

ARHI 427 Japanese Narrative Art **3c-0l-3cr**

Introduces the Japanese tradition of presenting narratives pictorially. Works considered include historical and fictional stories imaged in screens and scrolls, as well as modern and contemporary films which continue this visual idiom.

ARHI 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

ARHI 482 Independent Study **var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

ARHI 493 Internship **var-3-12cr**

For art history majors who wish to receive practical experience working within professional situations that relate to the student's artistic and occupational goals.

ART: Art (Studio)
Department of Art
College of Fine Arts

ART 111 Figure Drawing **0c-6l-3cr**

A foundation course in drawing, including a study of the structure of drawing and composition with a variety of media and subject matter.

ART 112 Fundamentals of Drawing **0c-6l-3cr**

Seeks to integrate basic principles and fundamentals of drawing and design.

ART 113 Three-Dimensional Design **0c-6l-3cr**

Basic elements and principles of design are studied. A course in design in three dimensions.

ART 114 Color and Two-Dimensional Design **0c-6l-3cr**

Focuses on the consistent properties of color and the manner in which two-dimensional design can be organized. Specific attention is given to the complex interactions of color within two-dimensional design.

ART 211 Painting **0c-6l-3cr**

An introduction to painting in which a variety of materials, techniques, and approaches are explored.

ART 213 Woodworking: Function and Form **0c-6l-3cr**

Involves the study of woodworking and furniture design as it relates to the individual designer-artist. Students experience a formal background in both woodworking technique and the application of design.

ART 214 Ceramics 3c-3l-3cr Introduces the processes, techniques, and aesthetics of the ceramics medium with an examination of historical and contemporary approaches. Emphasis is placed on basic hand building methods and techniques.	ART 400 Professional Practices 3c-0l-3cr Prerequisites: BFA or BA studio majors only, senior status Professional practices for the visual artist. Major issues may include the development of a thesis exhibition, résumé development, an artist's professional image, portfolio development, marketing skills, career opportunities, and grant writing.
ART 215 Sculpture 0c-6l-3cr An introduction to sculpture with an emphasis on study of form as well as visualizing in the third dimension.	
ART 216 Jewelry and Metals 0c-6l-3cr Prerequisite: ART 113 or instructor permission An introduction to jewelry and metals with an emphasis on the design and creation of functional and nonfunctional art objects. Basic processes of metal fabrication is the focus.	
ART 217 Print Media 0c-6l-3cr An introduction to basic techniques of print media including planographic, relief, and electronic processes.	ART 421 Advanced Drawing 0c-6l-3cr Prerequisites: ART 111, 112 Meets the needs of the student who has some background in the field. Problems of composition, two- and three-dimensional relationships, and surface are on an individual basis.
ART 218 Introduction to Graphic Design 0c-6l-3cr Prerequisites: ART 112, 114 A survey of graphic design, exploring creative problem-solving techniques. Introduces the importance of concept development, aesthetics, symbolism, typography, and computer method. Studio experience provides a wide range of experiences for the beginning graphic design student. Projects, problems, and exercises will deal with skills, principles, application, and theory.	ART 425 Critical Practice 3c-0l-3cr Prerequisites: Junior, senior, or graduate status; art majors only Assists advanced students to acquire art criticism concepts and skills. Through written discourse, students engage in both the discourse of art making and contemporary theories.
ART 281 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.	ART 448 Brand Design 1.5c-2l-3cr Prerequisite: ART 214 An integrated study of branding concepts in marketing and art including aesthetics in commercial art, design of brand and corporate identity trademarks, theories of brand marketing and business strategy, customer touchpoints in brand communication, and branding as a corporate strategy. (Also offered as MKTG 448; may not be taken for duplicate credit.)
ART 313 Intermediate Ceramics: Wheel Throwing 3c-3l-3cr Prerequisite: ART 214 with a grade of "C" or better Focuses on structured problems in the ceramic medium designed to encourage the student to apply basic forming skills experienced at the introductory level with emphasis on wheel-thrown components and practice. Pottery shapes requiring singular and multiple-form components are investigated along with kiln design and firing, as well as high-fire clay and glaze calculation as both theory and practical experience.	ART 451 Advanced Woodworking: Function and Form 0c-6l-3cr Prerequisite: ART 213 Offers advanced training and skills involving the study of contemporary furniture design and woodworking. Emphasizes a technical and aesthetic point of view.
ART 316 Intermediate Jewelry and Metals 0c-6l-3cr Prerequisite: ART 216 Technical expertise is further developed, gradually shifting from formal techniques to experimentation and individual expression. Various techniques, including casting, stone setting, and an introduction to smithing, are explored.	ART 452 Advanced Ceramics 0c-6l-3cr Prerequisite: ART 214 Continued exploration of the field of ceramic production, along with kiln firing and glaze formulation.
ART 352 Intermediate Ceramics: Mold Making 3c-3l-3cr Prerequisite: ART 214 with a grade of "C" or better Focuses on structured problems in the ceramic medium designed to challenge the student to apply basic forming skills experienced at the introductory level with emphasis on mold making and hand-building techniques and practice as applied to sculptural forms with emphasis on content and analysis. Personal and creative interpretation of assignments with continued exploration of kiln firing, as well as low-fire clay and glaze formulation.	ART 453 Advanced Sculpture 0c-6l-3cr Prerequisite: ART 215 An opportunity to pursue independent study in sculpture. Materials and processes are individually chosen and the work related to broadening concepts.
ART 355 Intermediate Graphic Design I 0c-6l-3cr Prerequisite: ART 218 An intermediate-level study in graphic design focusing on digital illustration, complex typography, and publication design. Studio experience will focus on current professional 2-D digital illustration software.	ART 454 Advanced Painting 0c-6l-3cr Prerequisite: ART 211 Individual experimentation and exploration by the painter and investigation of the various technical approaches.
ART 356 Intermediate Graphic Design II 0c-6l-3cr Prerequisite: ART 218 Recommended Prerequisite: ART 355 An intermediate-level study in graphic design, researching publication design, grid systems, and multipage design. Studio experience will focus on current professional software used for publication design.	ART 455 Advanced Graphic Design I var-3-6cr Prerequisites: ART 218, 355; instructor permission required for 6cr studio Recommended Prerequisite: ART 356 Introduces three-dimensional modeling and rendering for illustration and animation. Studio experience focuses on current professional 3-D software.
	ART 456 Advanced Graphic Design II var-3-6cr Prerequisites: ART 218, 355; instructor permission required for 6cr studio Recommended Prerequisites: ART 356, 455 An exploration of web page and interactive design. Studio experience will focus on current professional web and interactive software.
	ART 457 Advanced Print Media var-3-6cr Prerequisites: ART 217, permission required for 6cr studio Student elects to study a print media process or processes in greater depth and works toward developing personal visual language and techniques ranging from the traditional to the nontraditional.
	ART 460 Advanced Jewelry and Metals 0c-6l-3cr Prerequisite: ART 216 or permission Technical expertise is further developed to challenge each individual to understand the relationship of concept to the completed object, whether it is jewelry, holloware, or a nonfunctional object. Various techniques are investigated in pursuit of a personal expression and aesthetic. May be repeated for credit.

ART 481 Special Topics **var-1-3cr**

May provide an in-depth study of a narrowly defined area of the discipline. Subject matter may change with repeated offering of the course. May be repeated for credit.

ART 482 Independent Study **var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

ART 493 Internship **var-3-12cr**

For art majors who wish to receive practical experience working within professional situations that relate to the student's artistic and occupational goals.

ASIA: Asian Studies**College of Humanities and Social Sciences****ASIA 106 Samurai and Gongfu Heroes: Masculinity in East Asia** **3c-0l-3cr**

Explores what it means to be a man, from the haohan of China to the Men of High Purpose of Japan and beyond. Analyses stories, films, and official histories that have encouraged Chinese and Japanese people to emulate the great heroes of the past and how these people and their stories have been re-used in modern Asia. (Also offered as HIST 106; may not be taken for duplicate credit.)

ASIA 200 Introduction to Asian Studies **3c-0l-3cr**

Introduces the study of Asian societies. Examines different regions of Asia and also different academic disciplines and how they create knowledge about Asia.

ASIA 483 Honors Thesis **3c-0l-3cr**

Prerequisites: Asian Studies minor, 3.25 cumulative GPA; 3.5 GPA in Asian Studies courses, departmental permission. Approval is based on academic appropriateness and availability of resources.
A two-semester sequence of research and writing, culminating in an honors thesis or project. Honors theses are completed individually under the direction of a professor who specializes in the student's area of interest and are approved by a thesis committee comprising the thesis director and two others. May be taken twice for a total of 6cr.

BCOM: Business Communication**Department of Management****Eberly College of Business and Information Technology****BCOM 221 Business Technical Writing** **3c-0l-3cr**

Prerequisite: ENGL 101
The application of business and technical writing styles, letters, memos, reports, procedures, and manuals are some areas of concern. Emphasizes clear, concise writing style. (May not be used as a substitute for BCOM 321) (Offered as BTST 221 before 2014-15.)

BCOM 231 Speech Communication for Professionals **1c-0l-1cr**

A study of theory and principles of effective oral presentations in a professional setting. Content includes audience analysis, management of speech anxiety, topic selection and refinement, proper selection and use of visual aids, and speech forms. Builds professional presentation skills as course assignments to develop, critique, and deliver professional presentations are fulfilled. (Offered as BTST 231 before 2014-15.)

BCOM 321 Business and Interpersonal Communications **3c-0l-3cr**

Prerequisites: ENGL 101, 202
A study of communication theory and principles as applied to business situations and practices; development of communication skills in areas of communication such as speaking, writing, listening, and nonverbal communicating. Emphasizes building effective interpersonal relations in a business environment. (Offered as BTST 321 before 2014-15.)

BCOM 342 Intercultural Business Communication **3c-0l-3cr**

Prerequisite: Junior standing

An in-depth study and theoretical understanding of intercultural business communication, including international, national, ethnic, racial, and socioeconomic cultures. Explore practices, trends, and difficulties of people primarily identified with one culture attempting to interact with people of another culture through speaking, listening, writing, and nonverbal means. Problems of intercultural communication situations for business are pinpointed, elements of the problems clarified, and guidelines projected for problem mitigation. (Offered as BTST 342 before 2014-15.)

BIOC: Biochemistry**Biochemistry Program****College of Natural Sciences and Mathematics****BIOC 301 Foundations of Biochemistry** **3c-0l-3cr**

Prerequisites: BIOL 202 and a grade of "C" or better in CHEM 232
A foundation in biochemical principles emphasizing the structure/function relationships of proteins, carbohydrates, nucleic acids, and lipids. Catalysis by enzymes, including reaction mechanisms, kinetics, and regulation of activity are considered in detail. The structure of biological membranes and transport of both solutes and signals across membranes are explored. Assumes an understanding of eukaryotic cell structure and organic chemistry of major functional groups.

BIOC 302 Advanced Biochemistry **3c-0l-3cr**

Prerequisite: Grade of "C" or better in BIOC 301
An examination of biochemical processes with a focus on metabolism. Central pathways are considered in detail, including regulatory mechanisms and hormonal signaling. Other selected processes and integration of mammalian metabolism are explored. Assumes an understanding of concepts relating to structure/function relationships for biomolecules, biological membranes, and signaling included in BIOC 301.

BIOC 311 Biochemistry Laboratory I **0c-4l-1cr**

Prerequisites: BIOL 202, CHEM 232
A companion to BIOC 301, including experiments in photometry, enzyme kinetics and purification, lipid isolation and characterization, electron transport in respiration and photosynthesis, and use of radioisotopes.

BIOC 312 Biochemistry Laboratory II **0c-4l-1cr**

Prerequisite: BIOC 311
A companion to BIOC 302, including experiments in membrane characterization, properties of amino acids, isolation and function of nucleic acids, and synthesis of proteins and nucleic acids.

BIOC 401 Laboratory Methods in Biology and Biotechnology **2c-4l-3cr**

Prerequisite: CHEM 351 or BIOC 301
Theory and practice in a number of major analytical and preparative techniques currently in use in physiology, molecular biology, and biotechnology. (Also offered as BIOL 401; may not be taken for duplicate credit.)

BIOC 480 Biochemistry Seminar I **1c-0l-1cr**

Prerequisites: BIOC 302, 312
A discussion of recent trends in biochemical thought. Oral and written reports on assigned readings, and library or laboratory research. Guest lecturers. The combination BIOC 480-490 counts as one writing-intensive course.

BIOC 481 Special Topics in Biochemistry **var-1-3cr**

Prerequisite: BIOC 302 or CHEM 351
A lecture-discussion course of recent biochemical topics or those of unique interest. Topic and instructors to change annually.

BIOC 482 Independent Research in Biochemistry **var-1-3cr**

Prerequisites: BIOC 302, 312, permission by program coordinator
Student conducts a research project in any area of biochemistry. Work supervised by faculty. Does not involve regular class or lab hours. Enrollment by permission only.

BIOC 490 Biochemistry Seminar II**1c-0l-1cr****Prerequisite:** BIOC 302, 312, 480

A discussion of recent trends in biochemical thought. Oral and written reports on assigned readings, and library or laboratory research. Guest lecturers. The combination BIOC 480-490 counts as one writing-intensive course.

BIOL: Biology**Department of Biology****College of Natural Sciences and Mathematics****BIOL 101 Basic Biology****2c-2l-3cr**

Deals with the principles of biology. Topics include cellular structure and physiology, growth and repair, reproduction and development, control, sources of food energy, inheritance, and man's interrelationship with his biological environment. The classification of plants and animals is reviewed briefly. Two hours lecture and two hours laboratory.

BIOL 103 Life on Earth**3c-2l-4cr****Prerequisite:** Non-Biology Department majors/minors only

A basic introduction to the concepts of ecology, biological diversity, and evolutionary biology. Students learn fundamental ecological concepts about how living things interact with each other and the physical environment and apply these to understanding the origin of the tree of life and environmental problems facing populations, communities, and ecosystems. Students also learn about mechanisms and consequences of evolution. (Does not count toward BIOL electives, controlled electives, or ancillary sciences for Biology Department majors and minors.)

BIOL 104 Human Biology: How the Human Body Works**3c-2l-4cr****Prerequisite:** Non-Biology Department majors/minors only

A basic introduction to the human body using disease as a mechanism for examining how the human body functions. Students explore the internal milieu of the body and how the different body systems affect this balance. Students gain an appreciation for the human body and its interactions with the environment. (Does not count toward BIOL electives, controlled electives, or ancillary sciences for Biology Department majors and minors.)

BIOL 105 Cell Biology**3c-0l-3cr****Prerequisite:** Enrollment restricted to students in the College of Health and Human Services

Introduces concepts and applications for understanding human biological function from the point of view of cellular biology.

BIOL 106 Human Genetics and Health**3c-2l-4cr****Prerequisite:** Non-Biology Department majors/minors only

A broad overview of the role that genetics and molecular biology play in the everyday life of humans. Organizes around a central question—how does genetics affect our health? Introduces human inherited diseases, genetic therapies utilized to correct genetic disorders, and the role of genetics in the new field of individualized medicine. Introduces the fields of stem cells and their therapeutic uses, the genetics of cancer, the microbial pathology of humans, and the utilization of vaccines in the treatment and prevention of human diseases. Using this background, the student is presented with the most recent events in the field of human genetic diseases and how they will affect the student in the future. (Does not count toward Biology electives, controlled electives, or ancillary sciences for biology majors and minors.)

BIOL 107 Introduction to Forensic Biology**3c-0l-3cr****Prerequisite:** Non-Biology Department majors and minors only

A broad overview of basic principles underlying modern applications of biology in forensic science. Explores the science of forensic biology, traditionally known as serology, and the broad scope of laboratory tests used to investigate crimes involving DNA, blood, and other body fluids. Focuses on the issues related to DNA fingerprinting as they apply to public or legal proceedings in the law enforcement arena. (Does not count toward Biology electives, controlled electives, or ancillary sciences for biology majors and minors.)

BIOL 115 Biotic Diversity of North America**3c-0l-3cr****Prerequisite:** Non-Biology Department majors/minors only

An introduction to the biological diversity of North America from Barrow, Alaska, to Tehuantepec, Mexico. All major aquatic and terrestrial biomes occurring in North America are examined with regard to plant forms, animal composition, and environmental (abiotic) conditions.

BIOL 117 Understanding HIV Biology and AIDS**3c-0l-3cr****Prerequisite:** Non-Biology Department majors/minors only

An introduction to the mode of infection and prevention of AIDS virus that are used as an illustration of biological principles. Profiles biological indicators for HIV disease and its progression to AIDS. Therapeutic and non-therapeutic approaches to treat HIV infections are emphasized. (Does not count toward Biology electives, controlled electives, or ancillary sciences for biology majors and minors.)

BIOL 118 The History of Pain**3c-0l-3cr****Prerequisite:** Non-Biology Department majors/minors only

Despite its many individual, social, and cultural characteristics, pain is based on an anatomical and physiological foundation. Looks at the history of scientific theories and hypotheses about understanding the pain mechanism. Through this type of study, students learn about the status of pain in various societies throughout the ages. (Does not count toward Biology electives, controlled electives, or ancillary sciences for biology majors and minors.)

BIOL 119 Emerging Diseases**3c-0l-3cr****Prerequisite:** Non-Biology Department majors/minors only

Introduces infectious diseases and their biological basis as well as the social, historical, and ethical consequences of these types of afflictions. Covers background material such as the germ theory of disease, the cell theory, disease transmission, and the structure of scientific knowledge at a fundamental level. Emphasizes ecology, epidemiology, evolution, and control of infectious agents, as well as prevention and treatment of infectious disease. Includes specific cases of emerging or re-emerging diseases with an emphasis on current events related to disease outbreaks. (Does not count towards Biology electives, controlled electives, or Ancillary Sciences for biology majors and minors)

BIOL 123 Perspectives in Cell and Molecular Biology**1c-0l-1cr****Prerequisite:** BIOL 202

For those interested in entering the Cell and Molecular Biology Track. Introduces the latest advances in the fields of molecular biology and biotechnology, as well as the career possibilities and professional responsibilities in these fields. Aids students in clarifying career goals and introduces them to the literature of molecular biology, including electronic resources. Includes field trips that might take place on weekends.

BIOL 150 Human Anatomy**3c-3l-4cr****Prerequisite:** Non-Biology Department majors only

A study of the functional and systematic anatomy of humans. Laboratory studies focus on models of human organs and systems along with a dissected human cadaver. Also includes mammals whose anatomy is then related to the human condition.

BIOL 155 Human Physiology and Anatomy**3c-3l-4cr****Prerequisite:** Non-Biology Department majors only (nutrition, dietetics, family and consumer sciences education, health and physical education, and safety, health, and environmental applied sciences majors)

A study of structure and function of the human body. Emphasizes normal function, with particular attention to functional anatomy, control mechanisms, and interrelationships among systems. Laboratory studies include experimentation and dissection. For students with little or no science background.

BIOL 200 Medical Terminology**2c-0l-2cr**

Requires students to not only learn vocabulary, but also the proper pronunciation of medical terms. A class limit is requested to accommodate pedagogical approaches to developing oral pronunciation skills.

BIOL 201 Principles of Ecology and Evolution 3c-3I-4cr**Prerequisite:** For science majors only

An introduction to ecology, including physiological and behavioral ecology, population and community ecology, and ecosystem and landscape ecology, and to evolution, including natural selection and population genetics, speciation, and phylogenetic history and systematics of life. Develops skills in the use of the scientific method. For science majors.

BIOL 202 Principles of Cell and Molecular Biology 3c-3I-4cr**Prerequisite:** CHEM 111 or 113

An introduction to the structure and function of prokaryotic and eukaryotic cells and their cellular biochemistry, with emphasis on the genetic flow of information from DNA to RNA to protein and the regulatory events, including cell-cell communication, that instruct these pathways. Develops skills in the use of the scientific method. For science majors. (Offered as BIOL 111 before 2015-16.)

BIOL 203 Principles of Genetics and Development 3c-3I-4cr**Prerequisite:** BIOL 202 or 111 or instructor permission

Introduces the science of genetics, with an emphasis on the basic principles of Mendelian genetics, the genetics of populations, molecular genetics, and the genetics of development. For science majors. (Offered as BIOL 263 before 2015-16.)

BIOL 205 Ecological Methods 2c-2I-3cr

Introduces the standard approaches for hypothesis testing in biological research, including experimental design, data collection, and data analysis. Emphasizes the analysis and interpretation of ecological data sets. Computer instruction focuses on software programs commonly used for biological data analysis.

BIOL 210 Principles of Plant Biology 2c-3I-3cr**Prerequisites:** BIOL 201, 202

Explores the diversity, form, and function of vascular and nonvascular plants. Focuses on the evolutionary innovations that distinguish different taxonomic groups of plants. Topics include plant anatomy and physiology, growth and development, plant classification, plant ecology, and genetically modified foods. Discusses ways that plants are important to humans, ranging from food and lumber to sequestering carbon dioxide. An in-depth exploration of crop plants, including the science of biotechnology. (Titled Botany before 2014-15.)

BIOL 211 Investigative Biological Forensics 3c-0I-3cr**Prerequisite:** BIOL 107 or equivalent or instructor permission

The lecture-only course examines how to collect and analyze biological evidences found on clothing, bones, insects, plants, weapons, and other surfaces to help identify victims and support criminal investigations. Covers a variety of subjects intimately linked including forensic anatomy, odontology, anthropology, pathology, entomology, botany, and environmental contamination. Presents case studies for each set of biological materials like insects, plants, bones, and fluids. Features in-depth discussion and writing.

BIOL 220 General Zoology 2c-3I-3cr**Prerequisite:** BIOL 201 or 112 or instructor permission

Examines the evolution, form, and function of all major animal phyla, from sponges through chordates. Interactive lecture-laboratory sessions follow a phylogenetic approach to the animal kingdom and incorporate essentials of animal ecology, physiology, functional morphology, and behavior.

BIOL 221 Environmental Health and Protection 3c-3I-4cr**Prerequisites:** BIOL 112 or 201; CHEM 102, 112, or 114; or instructor permission

Surveys indoor and outdoor environmental health hazards. Hazards are addressed from the standpoint of their source and nature, human health effects, measurement and control, and management.

BIOL 240 Human Physiology 3c-2I-4cr**Prerequisites:** BIOL 150 and CHEM 101; or BIOL 203; or BIOL 263; or KHSS 221; or instructor permission

The study of the mechanisms, but with the human organism functions. Mechanisms covered range from the molecular/subcellular to the tissue,

organ, and organism levels. Organ systems examined include the nervous, muscular, cardiovascular, respiratory, endocrine, renal, digestive, and reproductive. Emphasizes three major themes: (1) that organ functions are dependent on the underlying molecular and cellular processes, (2) that all organ systems use biological control systems to maintain organ homeostasis, and (3) that each organ function is closely controlled and dependent on the interaction/integration with functions from other organ systems. (Offered as BIOL 151 before 2015-16.)

BIOL 241 Introductory Medical Microbiology 3c-3I-4cr**Prerequisites:** Non-Biology Department majors in Health and Human Services and Natural Sciences and Mathematics only, BIOL 240; or instructor permission

An introduction to medical microbiology that focuses on the structure, biology, and genetics of microbes in relation to human disease and to bacteriology as well as bacterial, viral, and fungal pathogens and the mechanism of disease. Prepares student for advance study in microbiology and the health sciences. Standard methods and techniques are emphasized in laboratory. (Titled General Microbiology before 2015-16.)

BIOL 242 Comparative Vertebrate Anatomy 2c-3I-3cr**Prerequisite:** BIOL 220

An investigation of the comparative structure and function of the vertebrate body emphasizing the diverse solutions to the problem of design for survival and the evolutionary mechanisms that provide those solutions. Meets twice per week for 2.5 hours. Each meeting includes both lecture and laboratory experiences.

BIOL 250 Principles of Microbiology 3c-3I-4cr**Prerequisite:** BIOL 112 or 203 or instructor permission

An introduction to microbiology focusing on the fundamental principles of microbial structure, modes of reproduction, genetics, and physiology. Emphasizes the importance of microbes in ecological, industrial, immunological, and epidemiological processes. Standard microbiological methods and techniques are emphasized in laboratory.

BIOL 261 Ornithology 2c-3I-3cr

A study of birds of the region. Indoor laboratory as well as early-morning and possibly weekend field trips required.

BIOL 272 Conservation of Plant and Animal Resources 2c-3I-3cr**Prerequisites:** BIOL 201-202 or 103-104

A study of accepted practices in soil, water, forest, and wildlife conservation. Saturday field trips included.

BIOL 281 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

BIOL 300 Genetics and Medicine and Nutrition 3c-0I-3cr**Prerequisite:** BIOL 203 or 241 or CHEM 255

Examines how our genes play a role in disease and diet. Includes a fundamental background of genetics, as well as specific diseases that are caused by defective genes. Explores how nutrition interacts with the genome and its impact on health and disease.

BIOL 301 Fundamentals of Epidemiology 3c-0I-3cr**Prerequisites:** BIOL 104 and 119, or 203; and MATH 216 or 217; or instructor permission

Introduces epidemiologic principles, concepts, and methods used to study the distribution and determinants of diseases in populations. Includes public health and clinical applications. Covers the history of epidemiology, dynamics of disease transmission, measures of disease frequency and association, study designs, causation, and also considers ethics and public policy issues in epidemiology. (Offered as BIOL 460 before 2016-17.)

BIOL 310 Applied Entomology and Zoonoses 2c-3l-3cr

Prerequisites: BIOL 201, BIOL 220; or instructor permission

A study of the measures for abatement or control of arthropods, rodents, birds, and other disease vectors of public importance; selection, chemistry, formulation, and safe application of insecticides, rodenticides, and fumigants; pestciding equipment; application of biological and other measures of control.

BIOL 313 Forensic Analysis of DNA 3c-0l-3cr

Prerequisite: BIOL 211 or equivalent or instructor permission

The lecture-only course introduces the identification and assessment of biological evidence in criminal matters using DNA. Presents routinely used broad-based protocols for DNA typing, sample collection, and techniques applied in quality assurance during DNA profiling. Covers important questions about the use of DNA by criminal justice system.

BIOL 323 Introduction to Toxicology and Risk Assessment 3c-0l-3cr

Prerequisites: BIOL 104 or 203; CHEM 102 or 112 or 114; or instructor permission

A study of uptake, distribution, metabolism, and excretion of environmental chemicals; mechanisms of their toxicity; and their effects on major organ systems. Knowledge of these topics is applied to risk assessment procedures.

BIOL 331 Animal Developmental Biology 2c-3l-3cr

Prerequisite: BIOL 112 or 203; or instructor permission

Considers comparative and molecular development of vertebrate animals. General principles of development are illustrated using vertebrate, invertebrate, and plant materials.

BIOL 352 Comparative Animal Physiology 2c-3l-3cr

Prerequisites: BIOL 112 or 202, CHEM 231

A comparative study of homeostatic mechanisms and systems in animals and their relation to fundamental chemical and physical events in cells.

BIOL 362 Ecology 2c-3l-3cr

Prerequisites: BIOL 112 or 201, BIOL 210 or 220, or instructor permission

Studies the interrelations and adaptations of organisms; includes consideration of physical and biotic environmental factors. Field trips.

BIOL 364 Immunology 2c-3l-3cr

Prerequisites: BIOL 241 or 250; CHEM 102 or 232 or 351; or instructor permission

Physical and chemical properties of antigens and antibodies; nature of antigen-antibody interactions; mechanism of antibody formation; and immune reaction and disease. Lab employs serological techniques.

BIOL 401 Laboratory Methods in Biology and Biotechnology 2c-4l-3cr

Prerequisite: CHEM 351 or BIOC 301

Theory and practice in a number of major analytical and preparative techniques currently in use in physiology, molecular biology, and biotechnology. (Also offered as BIOC 401; may not be taken for duplicate credit.)

BIOL 402 Advanced Human Anatomy 3c-3l-4cr

Prerequisite: BIOL 111 or 202 or instructor permission; not open to students who have successfully completed BIOL 150; not open to students who have completed fewer than 60cr.

An intensive study of the gross anatomical structures and their functions within the human body. Explores the organization and integration of the human body on a region-by-region basis. For each region of the body, students observe all structures within that region simultaneously. This approach allows students to appreciate the integration of different biological systems within the body. Laboratory sessions center on regional cadaver dissection by groups of students to appreciate 3-D anatomical relationships.

BIOL 405 Biology of the Cell 2c-3l-3cr

Prerequisites: BIOL 111 or 203, CHEM 231, or instructor permission

Introduces the cellular and modular mechanisms by which individual cells grow, receive, and respond to internal and external signals and move. Discusses the latest advances in the discipline; students are expected to use current literature on their own as a means of building critical-thinking skills. The student-centered laboratory portion emphasizes individual and group activities.

BIOL 409 Pharmacology Principles and Applications 3c-0l-3cr

Prerequisite: BIOL 106 or 202 or 240

Explores the principles of the interactions of chemicals with biological systems in the context of human diseases of varied etiology (e.g. genetic, environmental) and clinical presentation. Introduces the general principles of pharmacokinetics and pharmacodynamics, integrating analysis at multiple biological levels (molecular, cellular, systems, organismal) to develop a broad view of the interaction of drugs with biological systems. Develops skills in pharmacological analysis through examination of actual and simulated sets of data. Examines applications of principles to specific fields of pharmacology (e.g., neuro-, cardiovascular, immuno-, endocrine, cancer) and explores the discovery and development of new medications using examples from recent scientific and clinical trial literature.

BIOL 410 Molecular Biology Topics 3c-0l-3cr

Prerequisite: BIOL 203 or 263 or BIOC 301 or CHEM 351

Involves the study of biological phenomena in molecular terms. Focuses on recombinant DNA principles as they relate to prokaryotes and eukaryotes. Emphasizes the modern methods used in recombinant DNA technology.

BIOL 411 Forensic Biology Laboratory Operations 2c-2l-4cr

Prerequisite: BIOL 313 or equivalent or instructor permission

A broad-based learning experience in multiple areas of Biological Forensics with special emphasis in unique nucleic acid and protein signature(s) patterns associated with the forensic biological evidence. Applies the theory and practice of presumptive and confirmatory testing methods on materials of forensic interest. Features in-depth discussion that integrates advanced characterization of biological evidences as it relates to criminal investigation and interpretation of the criminal justice system.

BIOL 425 Herpetology 2c-3l-3cr

Prerequisite: BIOL 220

A comprehensive survey of the classes of Amphibia and Reptilia, including their classification, structure, origin, evolution, phylogenetic relationships, distribution, and natural history. Special emphasis is placed on the herpetofauna of Pennsylvania.

BIOL 431 Ichthyology 3c-3l-3cr

Prerequisite: BIOL 220 or instructor permission

Introduces the biology, taxonomy, natural history, and conservation of freshwater and marine fishes. Examines the morphological and physiological adaptations that have allowed fish, the most diverse group of vertebrates, to thrive across a wide array of environments throughout the globe. Lab emphasizes field collection and identification of fish found in Pennsylvania and the Great Lakes region, but select representatives from other families are also covered. Critically evaluates published scientific papers related to fish biology, physiology, and evolution.

BIOL 450 Field Biology at Pymatuning Laboratory of Ecology 3c-3l-4cr

During the summer session, various field courses are offered through the Pymatuning Laboratory of Ecology. The offerings vary, depending on the summer. Possible offerings include Field Methods in Ecology and Conservation, Fish Ecology, Behavioral Ecology, Aquatic Botany, Forest Ecology, and Wildlife Conservation. Information regarding specific offerings is available from the department in the spring.

BIOL 451 Evolutionary Biology 2c-3l-3cr

Prerequisites: BIOL 201, 203

A comprehensive survey of evolution and evolutionary biology, including the history of evolutionary theory, natural selection, microevolutionary and macroevolutionary processes, and the phylogenetic history and classifica-

tion of life on earth. In laboratory, the focus is on learning current methods in population-level and phylogenetic analysis and presenting and leading peer discussions of important and current research in the field.

BIOL 455 Animal Behavior **3c-0l-3cr**

Prerequisite: BIOL 220 or permission

The biological study of animal behavior. Topics include the mechanisms, development, ecology, and evolution of behavior.

BIOL 456 Ecological Toxicology **2c-3l-3cr**

Prerequisites: BIOL 112 or 202, CHEM 112

Studies the impact of chemical pollutants and other stresses on nonhuman biological systems from the subcellular to ecosystem levels. An ecological risk assessment is conducted in the field and laboratory settings.

BIOL 462 Vertebrate Endocrinology **3c-0l-3cr**

Prerequisite: BIOL 104 or 203 or 240 or instructor permission

Examines how hormones, or cell signaling molecules, are produced in specific endocrine tissues and alter the physiology of the of respective target tissues.

BIOL 463 Limnology **2c-3l-3cr**

Prerequisite: BIOL 362

An investigation into the physical, chemical, and biological aspects of inland waters and their interrelationships. In the laboratory the student gains experience in the techniques involved in aquatic sampling and the analysis of data. (Saturday or Sunday labs may be required.)

BIOL 466 Principles of Virology **3c-0l-3cr**

Prerequisite: BIOL 203 or 263, or CHEM 351, or instructor permission

Topics include structure, classification, assay, and transmission of viruses; methods used in the study of viruses; viral replication, gene expression, and gene regulation; host-viral interactions and subviral pathogens.

BIOL 469 Circadian Rhythms and Sleep **3c-0l-3cr**

Prerequisite: BIOL 104 or 203 or 240 or instructor permission

Introduces the functions and mechanisms of biological clocks and rhythms in humans and animals, focusing primarily on circadian, or daily, rhythms. Examines how biological clocks keep time and influence behavior and physiology from the molecular level. Explains how circadian rhythms control sleep-wake and other important neurological functions to optimize biological fitness. Explores the consequences of disrupted circadian timing on physical and psychological health and performance.

BIOL 471 Dendrology of the Eastern US **2c-3l-3cr**

Prerequisite: BIOL 210 or instructor permission

A comprehensive survey of the tree species in the eastern portion of North America with an emphasis on Pennsylvania forests.

BIOL 473 Seedless Vascular Plants: Ferns and Allied Flora **2c-3l-3cr**

Prerequisite: BIOL 210

A comprehensive survey of morphological and habitat characteristics of seedless vascular plants (generally ferns and their allies) of Pennsylvania and the surrounding states.

BIOL 475 Mammalogy **2c-3l-3cr**

Prerequisite: BIOL 220

A general discussion of mammals emphasizing systematics, distribution, and structural and functional modifications related to evolution of this group. Lab work samples numerous techniques that can be applied to mammalian biology.

BIOL 477 Neurobiology **3c-0l-3cr**

Prerequisite: BIOL 105 or 111 or 202 or 240 or PSYC 350 or instructor permission

Presents the underlying mechanisms through which the nervous system mediates behavior, from the molecular to the organismal level. Emphasizes two major themes: (1) the roles of synapses and neuronal excitability in shaping the input/output functions of neurons and neuronal networks and (2) the role of neuronal development and neuronal experience upon resultant neuronal organization.

BIOL 479 Neurobiology of Addiction **3c-0l-3cr**

Prerequisite: BIOL 104 or 203 or 240 or instructor permission

Examines the biological foundations of addiction, with special emphasis on cellular and molecular mechanisms. Studies: (1) the effects of a wide range of drugs of abuse on brain function, (2) the neural circuitry of addiction, (3) the neurobiological influence of genes and environment on drug taking, and (4) the biological basis for traits linked to drug use, such as personality, memory, and mood. Discusses how cutting-edge biological methods are answering key questions about addiction and how the results of such research can be used to improve clinical treatment.

BIOL 480 Biology Seminar **1c-0l-1cr**

A discussion of recent trends in biological thought and research. Students report on assigned readings and/or personal research.

BIOL 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Course varies from semester to semester, covering diverse topics in specific areas of biology.

BIOL 482 Independent Study **var-1-3cr**

Prerequisites: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost. A 2.5 cumulative GPA and in major courses is required.

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources. Work is supervised by a faculty member, but does not involve regular class or laboratory hours.

BIOL 483 Honors Thesis/Independent Study **var-1-6cr**

Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

BIOL 484 Honors Seminar **2c-0l-2cr**

Prerequisite: Admission to the Biology Honors Program

Selected topics in biology. Use of the literature in preparation for advanced course work and BIOL 483. Analyzes the literature, develops a literature review, and develops a thesis proposal. Guest speakers provide additional exposure to major areas of biology.

BIOL 490 Field Studies in Biology **var-1-4cr**

Prerequisites: Specific prerequisites, as are appropriate to the course, will be set by individual instructors; instructor permission

Various specialized field courses instructed by biologists from IUP.

Explores the rich diversity and ecology of the flora and fauna that inhabit specialized regions of Pennsylvania, the United States, or other countries. Emphasizes ecology, behavior, and natural history of organisms in their natural surroundings. Must meet travel and living expenses. May be taken more than once for credit and grade if content is different.

BIOL 493 Biology Internship **var-3-12cr**

Prerequisites: Biology major with at least 60cr, 2.5 cumulative GPA, and permission of the director of internships and the chairperson

Selected students have the opportunity, under department supervision, to gain off-campus practical experience in area of interest. Only 6cr may be applied toward major; total number of credits is decided in consultation involving student, his/her advisor, and director of internships.

BLAW: Business Law
Department of Finance and Legal Studies
Eberly College of Business and Information Technology

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

BLAW 235 Legal Environment of Business 3c-0l-3cr

Explores the current American legal system by providing an introduction to a variety of legal topics important to all individuals and businesses. Topics must include sources of law, the court system and basic procedures, tort law, criminal law, and contracts. Topics may also include legal research and intellectual property. Ethical issues and international law are integrated throughout.

BLAW 336 Law of Business Organizations 3c-0l-3cr

Prerequisite: BLAW 235

A study of the law dealing with commercial paper, agency, partnerships, corporations, and bankruptcy.

BLAW 441 The Law of Property Oil and Gas Leasing I 3c-0l-3cr

Prerequisite: BLAW 235

Gives students an understanding of fundamental energy law, including oil and gas law. Includes analysis of natural resource leases and contracts, rights and ownership of the mineral estate, law of capture, contracts, clauses, and covenants of the oil and gas lease, oil and gas operating agreements, title and conveyance of oil and gas leases, pooling and utilization on private and federal lands, easements and right of ways in connection with natural resource exploration, environmental considerations and impacts of natural resource drilling and exploration, the legal structure of the energy industry, (Public Utility Holding Company Act, Federal Energy Regulatory Commission) land use restrictions, and eminent domain.

BLAW 442 The Law of Property Oil and Gas Leasing II 3c-0l-3cr

Prerequisite: BLAW 441

Second legal course in the energy/oil and gas sequence and builds upon and advances concepts from the first course. Specifically geared toward the sophisticated legal understanding required to be employed as "landman" in the oil and gas fields. Covers these topics: the Habendum Clause, the drilling and rental clause, dry hole, cessation of production, and drilling operation provisions, delayed rental and bonus provisions, forfeiture and related provisions, implied covenants, prudent operator standard, implied drilling covenants, protection covenants, development, marketing and reasonable care covenants, assignments of royalties, royalty calculation under various state laws, drilling, and operating agreements, assignment of working interest, pooling and utilization issues and problems, oil and gas forms and leases, lien subrogation rights, environmental impacts from drilling standpoint and landowner standpoint. Industry guest speakers may also address these issues.

BTED: Business and Technology Education
Department of Adult and Community Education
College of Education and Communications

BTED 401 Web Design 3c-0l-3cr

Focuses on web design research and experimentation with basic to leading-edge design techniques enabling the creation of user-focused websites. Emphasizes web design techniques resulting in fast-loading and well-placed graphics, cohesive color and typography across platforms and browsers, clear navigational interface, and appropriate use of sound, animation, and video. A variety of software production programs is introduced and used. (Offered as BTST 401 before 2014-15.)

BTED 411 Methods in Business and Information Technology I 3c-0l-3cr

Prerequisites: EDSP 102, PSYC 101, and completion of the freshman and sophomore courses in the student's major areas

Includes instruction in the general methods of teaching and evaluating business courses. A major emphasis is on the planning for instruction.

Creative techniques and procedures for effectively teaching and managing the classroom are evaluated. Opportunities are provided to incorporate appropriate content and materials to allow for students with special learning needs. Current issues in vocational education such as advisory committees, adult education, and federal legislation are included.

BTED 412 Methods in Business and Information Technology II 3c-0l-3cr

Prerequisite: BTED 411

Includes instruction in the methods of teaching and evaluating both the technology-oriented and cognitive-related courses in business education. An emphasis is placed on planning instruction, developing methods and strategies for making effective classroom presentations, delivering instruction, and managing the classroom. Opportunities are provided to undertake the responsibilities assigned to the business classroom teacher incorporating appropriate content and materials to allow for students with special learning needs. Further, the prospective teacher is given opportunities to assume the teaching role competencies and research current trends in the field.

BTED 442 Training Methods in Business and Information Technology Support 3c-0l-3cr

Prerequisites: PSYC 101, junior standing

Includes the application of theories of adult learning to planning, delivering, and evaluating training for education and information technology. Major emphasis is on the planning of instruction. Topics include needs assessment, live and mediated instruction, classroom management, evaluation and follow-up methods, and evaluation of training strategies. (Offered as BTST 442 before 2014-15.)

BTED 470 Technology Applications for Education 3c-0l-3cr

Provides a prospective business educator with concepts, applications, and methodologies needed to be effective in today's classroom, including advanced web page coding, advanced computer applications, creation of an inquiry-oriented activity in which the information that learners interact with comes from Internet resources, and a learned society's rules for records management. Also includes instruction in the pedagogy of computer applications. The end product will be additions to students' e-portfolios as well as their work sample.

CDFR: Child Development and Family Relations
Department of Human Development, Fashion, and Interior Design
College of Health and Human Services

CDFR 218 Child Development 3c-0l-3cr

Prerequisite: Grade of "C" or better in PSYC 101

A survey of basic theories and research findings in child development from a global perspective. Coverage includes consideration of theories and research findings from prenatal development through pre-adolescence. Included among the topics covered are physical, cognitive, and social/emotional development and the development of self-understanding, language development, and moral development.

CDFR 224 Marriage and Family Relations 3c-0l-3cr

Prerequisite: PSYC 101

A developmental and interactional approach to understanding family studies and aids in understanding family life, with a primary emphasis on contemporary families. Relevant theoretical perspectives of how families operate are discussed. Areas covered include trends in family structures and functions globally, conducting research in family studies from a global perspective, diversity among families, gender roles in dating and marital relationships from a global perspective, communication and conflict resolution, human sexuality in contextual relationships, dating and singlehood, combining work and family roles, trends from a global perspective on parenting, effects of race and class on families, domestic violence, and divorce and remarriage.

CDFR 310 Child Observation and Assessment 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218 and enrolled in minor or major or instructor permission

A study of two important aspects of child development as a course of study: observational assessment and theory. Observational assessment methods are taught and mastered by the students. Relevant theories of child development are discussed. Students integrate their observational assessment experience with the child development theories via a case study project.

CDFR 315 Introduction to Early Intervention 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218, 224, 310

Focuses on early intervention policies and laws that relate to services for children from birth to school age, including the Individualized Family Service Plan (IFSP) and the Individualized Education Plan (IEP) process. Special emphasis is placed on ways to assist families in their roles as team members in the early intervention process, taking social, linguistic, economic, and cultural diversity into consideration. Provides practical information needed when working in early intervention settings.

CDFR 321 Preschool Education: Play and Developmentally Appropriate Practices 3c-0l-3cr

Prerequisite: Grade of “C” or better in CDFR 218

Emphasizes play as a developmental process, as the primary vehicle for early learning, and as the major aspect of the preschool curriculum. Utilizes the child development philosophy as the basis for early learning environments. Provides students with knowledge to implement developmentally appropriate curriculum and methods for preschool education programming.

CDFR 322 Early Care and Education 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218 and previous 200- and 300-level child development and family relations courses

Introduces the historical background of the fields of childcare and early childhood education and current educational issues and theories affecting the field. Includes curricula models, frameworks for curricula, research on the impact of early childhood experience, and diversity and inclusion issues.

CDFR 323 Family Issues 3c-0l-3cr

Prerequisite: Grade of “C” or better in CDFR 224

A concentrated study of selected areas of family life, with emphasis on current personal and social issues affecting the family.

CDFR 410 Infant and Toddler Development 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218, 310, 315, 321; compliance with current agency regulations; and enrolled in major or instructor permission

A study of characteristic developmental changes of human infants and toddlers from birth to approximately 36 months. Participation as teacher assistant in the infant/toddler childcare center provides experience in developmentally appropriate guidance and programming for very young children.

CDFR 411 Family and Community 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218, 224, 310, 315, 323; compliance with current agency regulation and enrolled in major/minor or instructor permission

A study of community agencies and their service to families. Covers advocating for children and families, identifying community agencies that aid families in need, examining the professional code of ethics and ethical decision making, and recognizing signs of trouble within families and referring them appropriately. Community service and agency speakers are integrated into course work. Participation in a community service project is a mandatory part of the course. Completion of this course with a grade of “C” or better is required for graduation.

CDFR 420 Infant Toddler Mental Health 3c-0l-3cr

Prerequisite: CDFR 410

An introduction and overview of Infant Mental Health. Focuses on strengths in infants and families, a relational framework for assessment and intervention, and a prevention orientation. Emphasizes an understanding of how principles of infant mental health provide a foundation for working with children and families across settings and disciplines.

CDFR 425 Adolescence: Risk and Resiliency 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 218 and 224

Focuses on growth and development of pre-adolescents and adolescents, parenting of adolescents, and adolescents as parents. Special emphasis is given to identifying risk and resiliency factors when working with adolescents and families in the field of human services. A variety of human development theories are examined in an attempt to understand the adolescent from both an individual and a societal point of view.

CDFR 426 Techniques of Parent Education 3c-0l-3cr

Prerequisites: Grade of “C” or better in 218, 224, 310, 315, 321, 322

An examination of the nature, extent, and significance of parent education and parent involvement. Students become knowledgeable of the diverse and complex characteristics and needs of families. Enables students to identify the interrelationships of home, school, and community agencies to enhance collaboration and cooperation. Students identify methods, programs, and curricula to increase communication with parents and families.

CDFR 427 Administration of Human Service Programs 3c-0l-3cr

Prerequisite: Child development and family relations major or minor or instructor permission

Facilitates the acquisition of special knowledge and competencies needed by successful administrators of human service programs, including proposal writing, budgeting and management, staff selection and training, and program evaluation. (Titled Administration of Child Development Centers before 2016-17.)

CDFR 428 Family Dynamics 3c-0l-3cr

Prerequisites: Grade of “C” or better in CDFR 224, 310, 323; and enrolled in major or instructor permission

Emphasizes processes and models of family development topics, including an understanding of the development and maintenance of interpersonal relationships with an emphasis on how the theoretical frameworks of family studies can aid in this understanding. Focuses on approaches and dynamics of principles related to familial and marital adjustment and coping, with an emphasis on understanding the strengths and weaknesses of families and how family members relate to each other.

CDFR 429 Teaching in Child Development Centers 2c-4l-4cr

Prerequisites: Grade of “C” or better in CDFR 218, 310, 315, 321, 322, 323, 410, 426; compliance with current agency regulations; and enrolled in major or instructor permission

Participation in a laboratory child development/early care and education center as a teacher’s assistant. Applying principles and concepts of child development is the major focus. Techniques of planning developmentally appropriate activities and utilizing positive guidance with a group of diverse preschool children are emphasized.

CDFR 481 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

CDFR 482 Independent Study var-1-3cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Upper-level students with high scholastic achievement pursue their particular interests outside the realm of the organized home economics education curriculum. May be taken more than once to a maximum of 3cr. Approval is based on academic appropriateness and availability of resources.

CDFR 493 Internship **0c-6 to 12l-6-12cr**

Prerequisites: Permission of child development and family relations program, human development, fashion, and interior design department, and college dean; completion of at least 75cr; minimum GPA of 2.5 in major; compliance with current agency regulations; and enrolled in major Practical field experience related to the student's major area of study. Specific objectives are developed individually in consultation with the internship coordinator and/or university faculty member who supervises the internship. Logs and major paper required. May be taken for 6 to 12 credits.

CHEM: Chemistry
Department of Chemistry
College of Natural Sciences and Mathematics**CHEM 100 Preparatory Chemistry** **3c-0l-3cr**

A discussion of the fundamental terminology, calculations, and concepts of chemistry, including scientific measurements and calculations, simple definitions and concepts, atomic structure, the mole, mass and solution stoichiometry, ionic and covalent bonding, and the naming of atoms, molecules, and ions. Prepares science majors with limited backgrounds in chemistry for freshman chemistry courses and may not be used toward any major or minor or Liberal Studies. Restricted to students in the Colleges of Natural Sciences and Mathematics and Health and Human Services. Students who have earned a "C" or better in a higher number chemistry course may not take this course.

CHEM 101 College Chemistry I **3c-2l-4cr**

Basic principles and concepts of inorganic chemistry are developed using atomic and molecular structure with illustrative examples from descriptive chemistry. The laboratory portion illustrates physical and chemical properties in a qualitative and quantitative manner. For selected majors within the College of Health and Human Services and to fulfill the Liberal Studies Natural Science Laboratory Sequence requirement.

CHEM 102 College Chemistry II **3c-2l-4cr**

Prerequisite: CHEM 101

Fundamental principles and concepts of organic chemistry and biochemistry are studied. Deals primarily with structural features of organic compounds, the chemistry of functional groups, and practical examples and uses of organic compounds. The laboratory portion illustrates properties and reactions of representative organic compounds. For selected majors within the College of Health and Human Services and to fulfill the Liberal Studies Natural Science Laboratory Sequence requirement.

CHEM 105 The Forensic Chemistry of CSI **3c-0l-3cr**

For students who would like to learn about forensic chemistry and the basic science needed to understand it. Chemical concepts on the level of an introductory chemistry course and their applications to forensic science are explored in detail. Topics include the forensic analysis of drugs, fibers, glass, fingerprints, arson, questioned documents, and other types of physical evidence. Other topics include how forensic science is portrayed in novels, movies, computer games, and TV and the methods used in forensic evidence collection at a crime scene. Course cannot be used to fulfill the requirements for a chemistry major or minor.

CHEM 111 General Chemistry I **3c-3l-4cr**

An introductory course for science and preprofessional health majors. First half of a two-semester sequence designed to give students the foundation of knowledge and laboratory techniques required to successfully complete a degree program in the sciences or gain entry into professional health programs. Topics include atomic theory, an introduction to chemical reactions, stoichiometry, gas laws, thermochemistry, chemical bonding, and molecular geometry.

CHEM 112 General Chemistry II **3c-0l-4cr**

Prerequisite: CHEM 111 or 113

An introductory course for science and preprofessional health majors. Second half of a two-semester sequence designed to give students the foundation of knowledge and laboratory techniques required to successfully complete a degree program in the sciences, or gain entry into professional

health programs. Topics include the solid states, solution theory, kinetics, equilibrium, thermodynamics, acids and bases, and electrochemistry.

CHEM 113 Advanced General Chemistry I **3c-3l-4cr**

Prerequisites: Placement into MATH 121 or 125, high school chemistry For well-prepared freshmen with high school chemistry and good math skills. Topics include atomic theory, chemical reactions, stoichiometry, thermochemistry, chemical bonding, molecular geometry, gas laws, the liquid and solid state, and solution theory. Topics are covered in greater depth and with more challenging problem solving than General Chemistry. For majors within the College of Natural Sciences and Mathematics and to fulfill the Liberal Studies Natural Science Laboratory Sequence requirement for those students.

CHEM 114 Advanced General Chemistry II **3c-3l-4cr**

Prerequisite: Grade of "C" or better in CHEM 113

A continuation of Advanced General Chemistry I. Topics include solutions, chemical kinetics, equilibrium and thermodynamics, acids and bases, buffers, and electrochemistry. Topics are covered in greater depth and with more challenging problem solving than General Chemistry. For majors within the College of Natural Sciences and Mathematics and to fulfill the Liberal Studies Natural Science Laboratory Sequence requirement for those students.

CHEM 214 Intermediate Inorganic Chemistry **2c-3l-3cr**

Prerequisite: CHEM 112 or 114 or instructor permission

An in-depth study of inorganic compounds beyond what is presented in General Chemistry. Topics include Lewis structures and Lewis acid-base chemistry, an introduction to inorganic solids, coordination compounds, and bioinorganic chemistry. Provides a foundational understanding of inorganic chemistry to allow students to begin research and prepare for upper-level courses.

CHEM 231 Organic Chemistry I **3c-4l-4cr**

Prerequisite: CHEM 112 or 114

A study of compounds of carbon, with a special emphasis on structure-reactivity relationships. Laboratory work emphasizes methods of separation and purification of organic compounds.

CHEM 232 Organic Chemistry II **3c-4l-4cr**

Prerequisite: CHEM 231

A continuation of Organic Chemistry I, with an introduction to spectroscopic techniques. Laboratory work emphasizes the synthesis of representative compounds.

CHEM 255 Biochemistry and Nutrition **3c-0l-3cr**

Prerequisite: CHEM 102

For nutrition and dietetics majors. Studies chemistry and biological function of biologically active compounds with respect to nutritional requirements.

CHEM 290 Chemistry Seminar I **1c-0l-1cr**

Prerequisite: CHEM 100 or 111 or 113

Provides knowledge to students concerning undergraduate research and career possibilities based on a degree in chemistry or biochemistry. Much of this class consists of presentations to students by research faculty in chemistry, biochemistry, and other departments across the university.

CHEM 325 Analytical Chemistry I **3c-3l-4cr**

Prerequisite: CHEM 231

An introduction to the principles of analytical chemistry, including gravimetric, volumetric, and basic instrumental analysis. Special emphasis is placed on both perfecting the student's laboratory technique and on the application of general chemical knowledge through problem solving.

CHEM 326 Analytical Chemistry II **3c-3l-4cr**

Prerequisites: CHEM 325, 341

A more detailed examination of the principles of analytical chemistry. Student learns theoretical and practical aspects of sampling, data acquisition, and spectroscopic, electrochemical, chromatographic, thermal, mass spectrometric, and affinity methods of analysis.

CHEM 331 Organic Molecular Structure**Determination****4c-var-3cr**

Prerequisites: CHEM 231, 232 (CHEM 232 may be taken concurrently)
Gives the student experience in systematic identification of various classes of organic compounds by both chemical and physical methods.

CHEM 335 Advanced Organic Chemistry**3c-0l-3cr**

Prerequisites: CHEM 232, 341

Selected topics of current interest covered. Possible topics include reaction mechanisms, molecular spectroscopy, stereochemistry, natural products, heterocyclics, polymer chemistry, and organic synthesis.

CHEM 341 Physical Chemistry I**4c-0l-4cr**

Prerequisites: PHYS 112 or 132; MATH 126; grade of "C" or better in CHEM 112 or 114

Foundations of chemical thermodynamics, equilibria, kinetics, quantum mechanics, and spectroscopy.

CHEM 342 Physical Chemistry II**3c-0l-3cr**

Prerequisites: CHEM 341, MATH 225 (may be taken concurrently)

In-depth exploration and applications of chemical thermodynamics, equilibria, kinetics, quantum mechanics, and spectroscopy.

CHEM 343 Physical Chemistry Laboratory I**0c-3l-1cr**

Prerequisite: CHEM 341 (may be taken concurrently)

Experiments illustrating application of fundamental laws to actual systems. (writing-intensive course)

CHEM 344 Physical Chemistry Laboratory II**0c-3l-1cr**

Prerequisites: CHEM 343; must be taken after or concurrent with CHEM 342

An extension of CHEM 343; experiments related to chemical kinetics, molecular spectroscopy, and other topics of physical chemistry.

CHEM 351 Biochemistry**4c-0l-4cr**

Prerequisite: CHEM 231

A study of chemistry and biological functions of carbohydrates, lipids, proteins, minerals, vitamins, and hormones.

CHEM 390 Chemistry Seminar II**1c-0l-1cr**

Prerequisite: CHEM 290 or 232

A seminar course to provide knowledge regarding effective oral and written scientific communication and the ethics of scientific practice. Students learn how to read and evaluate a research paper from the literature, how to formulate and write a research proposal, and how to present a research poster. Attendance of seminars outside of class time is required.

CHEM 411 Advanced Inorganic Chemistry**2c-3l-3cr**

Prerequisites: CHEM 214, 341

Discussion of advanced theories of atomic structure, chemical bonding, acids and bases, coordination compounds, and selected topics. In the laboratory portion, techniques used in the synthesis and characterization of inorganic compounds are explored.

CHEM 460 Chemistry and Physics of Materials**3c-0l-3cr**

Prerequisites: CHEM 112 or 114 and PHYS 112 or 132

Provides unified treatment of materials. Emphasizes physical and chemical origins of material properties. Multidisciplinary approach using chemistry, physics, and geoscience to study bonding and crystal chemistry. An interdisciplinary approach to the study of material phenomena involving electronic devices, energy storage, second harmonic generation, superconductivity, and others.

CHEM 461 Modern Diffraction**3c-0l-3cr**

Prerequisites: CHEM 112 or 114 and PHYS 112 or 132

Investigates advances in crystallography and its applications to modern science. Emphasizes powder diffraction, including Rietveld analysis. Develops proficiency in data collection, phase analysis, and structure refinement and shows how crystallographic science can address scientific problems.

CHEM 481 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

CHEM 490 Chemistry Seminar III**1c-0l-1cr**

Prerequisite: CHEM 390

A discussion of recent trends in chemical thought. Oral and written reports on assigned readings, library, or laboratory research. Guest lecturers. A seminar course to provide knowledge to students regarding effective oral and written scientific communication. Students refine their skills in reading and evaluating research papers from the literature, write a formal research paper, and present a research seminar. The combination of CHEM 390 and 490 counts as one writing-intensive course.

CHEM 493 Internship in Chemistry**var-4-9cr**

Prerequisites: CHEM 111 or 113, CHEM 112 or 114, CHEM 231, 232, 321, 341, junior status, and departmental approval

Full-time involvement in an actual "on-the-job" situation in an industrial or research laboratory under the tutelage of a selected preceptor. A department faculty member works closely with the student and preceptor and assumes responsibility for making the final evaluation and assigning a grade.

CHEM 498 Problems in Chemistry**var-1-2cr**

Prerequisites: CHEM 231 and permission of chairperson

Supervised undergraduate research, in conjunction with a faculty member in the Chemistry Department.

CHIN: Chinese**Department of Foreign Languages****College of Humanities and Social Sciences****CHIN 101 Elementary Chinese I****4c-0l-4cr**

For beginning students. Introduces the Chinese language, with attention focused on the three modes of communication: interpretive listening and reading, interpersonal speaking and writing, and presentational speaking and writing. Students learn pronunciation, fundamental grammatical patterns, and how to write approximately 250 characters. Also imparts knowledge of Chinese culture and society. Attendance is required. May not register for or take a D/F repeat in CHIN 101 when credit has already been received for a higher-numbered Chinese course.

CHIN 102 Elementary Chinese II**4c-0l-4cr**

Prerequisite: CHIN 101

A continuation of Elementary Chinese I, focusing on the three modes of communication—interpretive listening and reading, interpersonal speaking and writing, and presentational speaking and writing—to build proficiency in using the Chinese language in real-life situations. Also imparts knowledge of Chinese culture and society. Attendance is required. May not register for or take a D/F repeat in CHIN 102 when credit has already been received for a higher-numbered Chinese course.

CHIN 201 Intermediate Chinese**4c-0l-4cr**

Prerequisite: CHIN 102

A continuation of previous work on the three modes of communication: interpretive listening and reading, interpersonal speaking and writing, and presentational speaking and writing, so that students can function in everyday situations. Also imparts knowledge of Chinese culture and society. Liberal Studies credit is given. Attendance is required. May not register for or take a D/F repeat in CHIN 201 when credit has already been received for a higher-numbered Chinese course.

CHIN 202 Intermediate Chinese IV**3c-0l-3cr**

Prerequisite: CHIN 201

An intermediate course for students who have already studied Chinese. A continuation of mastery of the four basic skills: reading, writing, speaking, and listening. Also imparts knowledge of Chinese culture. Attendance and language lab practice are required.

CHIN 281 Special Topics	var-1-3cr
CHIN 481 Special Topics	var-1-3cr
CHIN 482 Independent Study	var-1-3cr

CHSS: College of Humanities and Social Sciences

CHSS 121 University Foundations **2c-0l-2cr**
Provides freshmen on the Punxsutawney Regional Campus with a transition from secondary education to collegiate-level learning and expectations. Foremost, teaches critical thinking. In addition, interests and majors are explored, and fundamental learning skills and university support services and policies are taught.

CHSS 342 Social Studies Teaching Lab **0c-1l-1cr**
Prerequisites: EDUC 242 and currently enrolled in EDUC 342
A laboratory experience providing the opportunity to explore and experiment with strategies and methodologies connected with teaching in the various disciplines of the social studies. Offers hands-on experience with public school students in a controlled setting. Allows students to experience middle and high school settings as well as build a repertoire of social studies teaching methodologies that enables them to complete EDUC 342 more effectively.

CHSS 343 Applied Practice in Secondary English Language Arts **1c-0l-1cr**
Prerequisite: EDUC 242
Corequisite: Concurrent with EDUC 342
In conjunction with EDUC 342, prepares candidates for field experience in secondary English language arts. Students continue to develop skills for school-site observation, are introduced to philosophical models of classroom management, and receive instruction about completing the Step 2 portfolio requirement. Provides opportunity for students to apply understanding of pedagogical content knowledge to observation and lesson design and to familiarize themselves with teacher research methodology.

CNSD: Counseling and Student Development The Counseling Center Student Affairs Division

CNSD 150 Life Skills: Improving Your Social and Emotional Intelligence **1c-0l-1cr**
Prerequisite: Instructor permission
Provides practical, hands-on, cognitive, emotional, and interpersonal skills that help students to increase their abilities to process and respond to environmental demands and stresses of their social and academic environment. These skills include mindfulness, emotion regulation, behavior management, and handling relationships by understanding emotions in others. The goals are to understand basic principles of emotion regulation and interpersonal effectiveness, improve students' ability to focus, and attend to one's own thoughts and feelings as they apply to the skills described above.

COMM: Communications Media Department of Communications Media College of Education and Communications

COMM 101 Communications Media in American Society **3c-0l-3cr**
Required of communications media majors. An introduction to the evolution, status, and future of communications media. Explores intrapersonal communication through self-assessment, values clarification, and feedback; interpersonal communication through interviews, observations, case studies, and gaming; and mass communications through the examination of the processes and the technology utilized to disseminate and manage information. Career paths, field applications, professional associations, and the primary literature are investigated.

COMM 143 Media Wellness **3c-0l-3cr**
Helps students understand how media affects wellness. Analyzes and evaluates media consumption and media effects (both positive and negative) in a variety of genres including traditional and social media. Explores concepts

of media literacy, including evaluation and analysis of media content. Successful completion of this course fulfills the Liberal Studies Dimensions of Wellness requirement. Other 143 courses also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

COMM 150 Aesthetics and Theory of Communications Media **3c-0l-3cr**

Prerequisite or Corequisite: COMM 101 or JRNL 105
Examines the theoretical assumptions of sight, sound, and motion as applied to the design of communication products for different media formats. Demonstrates strategies for creative composition. Discusses psychological and physiological implications of images.

COMM 151 Basic Lighting for Still and Motion Imagery **1c-0l-1cr**

Examines the basic technical and design aspects of artificial and natural lighting in capturing still and motion imagery. Emphasizes mastery of the terminology and simulation of lighting concepts and conditions through virtual lighting software.

COMM 201 Internet and Multimedia **3c-0l-3cr**

Prerequisite: BTED/COSC/IFMG 101 or prior exposure to word processing and electronic mail
Focuses on the evaluation of information and multimedia resources available on electronic networks when doing research in an area of one's choice. Information literacy course for students to gain a more in-depth understanding of the information resources available electronically and of how to utilize them more effectively in communicating. Students learn how to access and utilize these resources for two-way communications and support for decision making while incorporating selected elements in multimedia presentations of their own design. (BTED/COMM/COSC/IFMG/LIBR 201 may be used interchangeably for D/F repeats and may not be counted for duplicate credit.)

COMM 205 Making Presentations with Media **3c-0l-3cr**

Prerequisite: COMM 101
An introduction to basic presentation skills, emphasizing the use of media to enhance presentations. Students research, organize, and write presentations; design appropriate media; and deliver individual and team presentations.

COMM 206 History and Theory of Making Games **3c-0l-3cr**

Prerequisite: COMM 150
Explores the origins of games and game play into the contemporary era of video and electronic games. Introduces the history of the games industry and the process of how games are created. Analyze games through an ethical and developmental framework, as well as explores how games are used for entertainment, teaching, and training.

COMM 230 Global Media and Communication **3c-0l-3cr**

An overview of global media and international communications. Describes how international communication and development of global media have influenced relationships among nations and among people with different cultural backgrounds. Covers social, economic, and political situations before and after globalization. Also covers press theories, media ownership, access to media, and the impact of media communications on culture and people living in developed and developing countries. (Titled Issues in International Communication before 2014-15.)

COMM 240 Communications Graphics **3c-0l-3cr**

Prerequisites: COMM 101 or JRNL 105, communications media major or minor, photography and digital imaging certificate or digital history certificate enrollment or permission
An introduction to graphic design concepts and related processes and techniques for a variety of forms of presentation media including television, multimedia, and online communications for educational, corporate training, and communications specialists. Both two- and three-dimensional design and basic animation concepts are explored. Hands-on experiences using a variety of graphic software applications.

COMM 249 Basic Audio Recording Techniques 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105, communications media major or minor, popular music studies certificate, audio production certificate, or digital history certificate enrollment or permission
Theory and practice of recording sound, developing an understanding of the language of sound recording as well as the ability to make sound recordings. Offers exposure to recording for various media including radio, music, motion pictures, television, and multimedia production. Material also appropriate for teachers who wish to make use of audio recording in the classroom. Provides hands-on experience through labs and projects to be completed outside of class.

COMM 251 Television Production 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105, communications media major or minor, photography and digital imaging certificate enrollment or permission
Develops basic skills in television production and direction. Consideration of operating problems of a television studio, as well as functions, limitations, and capabilities of television equipment and facilities.

COMM 261 Teamwork and Communication Skills for College and Career 3c-0l-3cr

Focuses on developing teamwork and communication skills for the presentation of career-oriented, technically rich information. Applies foundational theories of communication and the rhetoric of public communication and use that understanding to present academic research, data, and technical information orally and in written form. Prepares students to engage audiences, frame and present arguments, and develop the ability to present their topic and its significance in technical and non-technical settings. Explores different types of presentation situations including team oral presentations, team written reports, poster session presentations, platform presentations, symposia, and panel discussions. Prepares students to produce appropriate media to supplement their presentations. Presentations are video recorded for individual, peer, and instructor evaluation.

COMM 271 Beginning Photography 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105, communications media major or minor, interior design major, photography and digital imaging certificate or digital history certificate enrollment or permission
Introduces beginning photography students to photography as a tool for communications and as a lifelong leisure activity. Covers basic camera operation and other means of image acquisition, imaging processing and manipulation, printing, and photo finishing. Student is required to have a camera, preferably a single-lens reflex, with fully manual focusing and exposure capability.

COMM 281 Special Topics var-1-3cr

Prerequisite: As appropriate to course content
Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

COMM 302 Research in Communications Media 3c-0l-3cr

Prerequisites: COMM 150, ENGL 101 and 202 (grade of "C" or better)
Provides knowledge of the resource materials and research strategies used in the communications media field. Students design basic data gathering instruments, collect data, and assimilate information from various sources and data into communication products, services, or documents.

COMM 303 Scriptwriting 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105; ENGL 101 and 202 (grades of "C" or better) or permission
An introduction to the design of media materials and script writing. Style and techniques of writing are analyzed. Classroom emphasis is on writing critiques, and revision of designs and scripts. Scripts for audio, multimedia presentations, and motion picture and television productions are written. May be offered under a different topic area such as: COMM 303 Scriptwriting: Comedy or COMM 303 Scriptwriting: Drama. May be repeated for a maximum of six credits under a different topic area. Students who need to D/F repeat COMM 303 may repeat the course under a different variable title.

COMM 305 Electronic Media Programming and Sales 3c-0l-3cr

Prerequisite: COMM 150
Explores two primary functions of the electronic media: providing programming for audiences and providing economic viability to media outlets by selling commercial time to clients. Explores topics such as program development, scheduling, and promotion. Also explores the basic strategies used in the electronic media to sell commercial time and the use of audience and ratings analysis in the processes of programming and sales.

COMM 306 2-D Digital Game Development 3c-0l-3cr

Prerequisite: COMM 206
Examines the theory and development of digital games. Topics explored include the logics of gameplay, the process of game development, gaming technology, and the psychology of gaming. The history and organization of the gaming industry are also examined. Students also create deliverables around a game concept they develop in the process of completing the course.

COMM 315 Persuasive Media Writing 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105; ENGL 101 and 202 (grades of "C" or better)
Introduces concepts of writing persuasive announcements, such as commercials and promotional messages, and other content for digital media. Analyzes persuasive media announcements, and incorporates writing with the use of evidence, emotion, and reasoning to reach audiences. Aids in understanding how to create media messages that influence audience attitudes and behaviors.

COMM 325 Women in Media 3c-0l-3cr

An overview of women in media (including television, film, radio, the Internet, etc.) and the historical development, along with social context that influence women's involvement in the media, both nationally and internationally. Analyzes topics related to media effect theories and portrayal of women in media that influence some of the issues women face in their gender roles. Also identifies key women in media from the past and present and their contributions to the field.

COMM 330 Instructional Design for Training and Development 3c-0l-3cr

Prerequisites: COMM 101 or JRNL 105; ENGL 101 and 202 (grades of "C" or better) or permission
Examines the systems approach for the design, development, and evaluation of instructional material. Students learn about the history of instructional design and development and the current status of the field. Each student produces a self-instructional prototype that requires the student to systematically and creatively apply the concepts and rules learned.

COMM 335 Communications Consulting and Project Management 3c-0l-3cr

Prerequisite: COMM 101 or JRNL 105
Presents the theoretical views and clinical applications of consulting skills and practices associated with and needed by communication professionals. Presented are the functions and role of the consultant, the client's perspective on consulting, hiring a consultant, ethics in consulting, personal assessment tests, and related literature and models.

COMM 340 Advanced Communication Graphics 3c-0l-3cr

Prerequisites: COMM 240, permission
An in-depth experience in planning and preparing graphic materials commonly used in the communications profession; graphic materials include design, photosketching, lettering, slide titling and duplication, preparation of camera-ready art, lithographic film and master layout sheets, professional slide flat production and photocopy, large-format transparency production, color key, and color systems.

COMM 345 Television Criticism 3c-0l-3cr

Prerequisite: COMM 150 or instructor permission
The medium of television offers a unique environment for development and delivery of information, entertainment, and news. Explores and analyzes television programming. Includes examination of genres ranging from situation comedy to drama to miniseries and made-for-TV movies.

COMM 348 Animation Prerequisite: COMM 150 Introduces traditional and digital animation techniques and offers practical experience in planning and producing animated sequences. Includes a history of animation and theories of animation, both applied and as a communication medium. Practice in designing, drawing, modeling, simulating, creating, and texturing animated sequences; preparation of character designs; story boards and cue sheets; integration of visual effects, animation, and sound.	3c-0l-3cr	COMM 374 Documentary Photography Prerequisites: Junior/senior standing, COMM 101 or JRNL 105, or permission Prepares students to photograph documentary content that explores aspects of historical significance, cultural value, social change, and social injustice. Explores the differences and similarities between documentary photography and purely aesthetic photography to capture images focused on social and historical value. Calls for students to critically analyze documentary images, projects, photographers, and the societal impact they have made to create new and influential images for modern and future utilization. Students are required to have access to a digital camera.	3c-0l-3cr
COMM 349 Radio Production Prerequisites: COMM 101 or JRNL 105; communications media major or minor, audio production certificate enrollment or permission An introduction to production techniques as they pertain to radio. Exposure to programming, scripting, producing programs, intros, outros, commercials, public service announcements, station identifications, and promotional announcements. Also deals with the interaction of a radio station with national networks and with the real-life concerns of deadlines.	3c-0l-3cr	COMM 375 Mass Media and Behavior Prerequisites: PSYC 101 and junior or senior status Theory and research on the influence of the mass media on human behavior and attitudes. Topics include the effects of news and political advertising on public opinion; the effects of racist and sexist portrayals; and the effects of violence and pornography on aggressive behavior. (Also offered as PSYC 375; may be taken only once.)	3c-0l-3cr
COMM 350 Advanced Radio Production Prerequisites: COMM 349; cannot be taken concurrently; communications media major <i>or</i> communications media minor <i>or</i> audio certificate status Refines and supplements the production skills introduced in COMM 349, advancing beyond isolated off-air announcements to producing radio programs of substantial length and complexity. Introduces advanced radio skills including preproduction and planning for long form programming, live program production, mobile recording, advanced sound mixing and editing, sequencing, mastering, and more. Projects may include radio news production, radio documentary, public affairs, and radio drama.	3c-0l-3cr	COMM 380 The History of African Americans in Film Traces the historical development of the roles of African Americans in film. Examines the early stereotypic portrayals of this group, the origins of these stereotypes, and the ongoing changes, positive and negative, that have occurred regarding the media representation through research, film, and archetypal analysis, observation, and discussion. The new generation of African American filmmakers and their creative efforts to promote more realistic portrayals are analyzed.	3c-0l-3cr
COMM 351 Advanced Video Production Prerequisite: COMM 251 A production course that emphasizes advanced field production techniques. Some of the topics covered include; field lighting, video post-production editing with A-B roll, on-line editing, and non-linear editing. Provides hands-on experience through projects and field trips. May be offered under a different topic area such as: COMM 351 Advanced Video Production: Documentary Video or COMM 351 Advanced Video Production: Music Videos. May be repeated for a maximum of six credits under a different topic area. Students who need to D/F repeat COMM 351 may repeat the course under a different variable title.	3c-0l-3cr	COMM 390 Practicum in Communications Prerequisites: Communications media major, department permission A specialized study under the supervision of a faculty sponsor. Students make media service contributions to department and campus media-related facilities, while receiving credit. For each practicum credit, students will log a minimum of 90 hours of service. A maximum of 6 practicum credits can be used within a 120-credit degree program. The combination of practicum and internship credits cannot exceed 15 credits.	var-1-3cr
COMM 354 Media Law and Policy Prerequisite: COMM 150 or instructor permission Surveys areas of law and policy regulating commercial and consumer use of media technologies. Covers law and policy pertaining to broadcasting and cable, intellectual property, station licensing and renewal, defamation, privacy, Internet regulation. Examines the historical development of the FCC and its jurisdictions. Discusses case studies along with the relevancy of some laws as they pertain to today's mediated society. (Titled Broadcast Regulation before 2015-16.)	3c-0l-3cr	COMM 395 Career Planning in Communications Media Prerequisites: Communications media major only with junior/senior status Serves as the primary skill-building and strategy-seeking experience for the internship program and later career entry and growth. Extensive writing, research, and individual counseling are involved.	1c-0l-1cr
COMM 360 Digital Sports Production Prerequisite: Instructor permission An introduction to the pre-production, production, and post-production processes of live and recorded sporting events. Engagement in all aspects of the production process, including live production for webcasting, video-recording and editing sporting events. Attendance and participation is required in the production of selected local sporting events, which may include nights and weekends outside of regular class time. This course may be repeated one time for a maximum of six credits.	3c-0l-3cr	COMM 401 Promotion for Radio, Television, and Cable Teaches students the promotion processes used by promotion directors at radio stations, television stations, and cable outlets. Emphasis is placed on understanding the purpose and application of demographic and psychographic targeting of the television, radio, and cable audiences. Helps students understand how to build audiences in the competitive television, radio, and cable environments.	3c-0l-3cr
COMM 371 Photography II: The Print Prerequisites: COMM 271, permission Develops camera and print-making skills to the degree that salon-quality photographic prints can be produced. Students will understand the photographic processes utilized in producing a high-quality negative and print to the extent that they can manipulate those processes to communicate an intended message with their photographs. Emphasizes camera and print control as well as composition and negative and print manipulation.	3c-0l-3cr	COMM 403 Broadcast Newswriting Prerequisites: COMM 101 or JRNL 105; ENGL 101 and 202 (grades of "C" or better) or permission Acquaints students with the various styles and script formats used in writing news scripts for radio and television. Includes instruction in writing news stories for radio and television and an introduction to broadcast news production. Practice and work to improve writing skills in this area of broadcast writing.	3c-0l-3cr
		COMM 406 3-D Game and Simulation Design and Development Prerequisite: COMM 348 Examines the theory and development of 3-D digital games and simulations from a communications media perspective. Learners are exposed to topics such as the logical structure of 3-D games and simulations, 3-D game technology, and the process of 3-D digital game development. Learners are also exposed to the history and organizational structure of the 3-D game industry as well as its theory and history.	3c-0l-3cr

COMM 407 Television Feature Production 3c-0l-3cr Prerequisite: COMM 251 Teaches the creative and technical elements necessary to produce feature programming for television. Combines theory and practice, with an emphasis on practice. Provides knowledge and skills on video capture, audio pick-up and mixing, and lighting design for field production and in-studio production. Produces feature stories for television, which includes filming on and off campus, script writing, interviewing, and editing as practiced at an international level.	COMM 449 Advanced Audio Recording Techniques 3c-0l-3cr Prerequisites: COMM 249, permission Sound recording utilizing advanced techniques and concentrating on specific applications. Students participate in an intensive lab experience utilizing the most advanced equipment available. Emphasizes application, editing, signal processing, and multitrack recording. Student is expected to produce a sound recording for a specific use of professional quality. May be offered under a different topic area such as: COMM 449 Advanced Audio Recording Techniques: Music Recording or COMM 449 Advanced Audio Recording Techniques: Instructional Media. May be repeated for a maximum of six credits under a different topic area. Students who need to D/F repeat COMM 449 may repeat the course under a different variable title.
COMM 408 Media Field Studies 3c-0l-3cr Prerequisites: COMM 101 or JRNL 105, junior standing, and instructor permission A hands-on course to help students learn about the production process involving on-location production. Has three distinct phases: Students begin with research and preproduction tasks on campus, may travel to a remote site to collect additional information and images, and use those images to complete a production; students are responsible for travel expenses.	COMM 451 Broadcast News Process 3c-0l-3cr Prerequisite: COMM 251 or permission Engages in reporting and presenting broadcast news programs. Content and assignments include analysis of news and public affairs broadcasting.
COMM 414 Music, Media, and Culture 3c-0l-3cr Prerequisites: Communications media major or minor, or popular music studies certificate and junior standing Examines the intersections between media technologies, popular music, and culture. May include technology's constant influence in musical performance, production, and distribution; the music industry's marketing of popular music; popular music's relationship to cultural identity (e.g., race, gender, sexuality); and music as a cultural practice.	COMM 460 Emerging Trends in Communication Technology 3c-0l-3cr Prerequisite: COMM 150 An introduction to the ever-changing world of telecommunication technologies, focusing on modern, computer-driven modes of information exchange. An opportunity to synthesize several of the technologies covered and integrate them into a workable solution to a practical telecommunication problem.
COMM 420 Media Portrayal of Crime 3c-0l-3cr Prerequisite: COMM 101 or JRNL 105 or CRIM 101 or departmental permission An examination of the portrayal of crime in the media (television, film, newspapers, music, video games, electronic/Internet). This includes, but is not limited to, victims, offenders, criminal justice actors, and the criminal justice system. Of importance is how the media select what is newsworthy and how they describe and/or alter criminal justice issues. Attention is paid to the media's influence on perceptions of crime, the ethics behind the media's perceptual influence, criminology and criminal justice issues of the general population, and the resultant criminal justice policies. Seminar based. (Also offered as CRIM 420; may not be taken as duplicate credit.)	COMM 470 Management Practices in Electronic Communications 3c-0l-3cr Prerequisites: COMM 150, any communications media writing-intensive course, and junior or senior standing Presents the theory and practice of media management. Areas covered include problem solving, documenting and reporting, career systems, budgeting, personnel, ownership, unionization, market analysis, and special topics as directly related to communications media industries. Students conduct case study research related to their career direction.
COMM 440 Multimedia Production 3c-0l-3cr Prerequisite: COMM 240 or instructor permission Presents the processes and techniques of planning, designing, and producing used with interactive multimedia. Provides hands-on experiences in the use of graphics, audio, animation, video, and authoring software applications to produce an aesthetically acceptable product that meets specific objectives. Meets the needs of educational media, corporate training, and communications specialists.	COMM 471 Electronic Imaging 3c-0l-3cr Prerequisite: COMM 271 or permission An introduction to the use of electronic still photography (ESP) for the capture, recording, and transfer of still images and the use of computers for the storage, manipulation, and output of color and black and white photography. Extensive training in the use of software packages for image enhancement, restoration, and manipulation is provided. Students learn the applications of this technology to the print media and examine the ethical and legal issues of image manipulation.
COMM 445 Applications and Techniques of Motion Pictures 3c-0l-3cr Prerequisite: COMM 150 or instructor permission A survey of the role that motion picture film production plays in society. A major emphasis is on the variety of applications with special consideration given to motion pictures as a tool to support research.	COMM 475 Senior Portfolio Presentation 1c-0l-1cr Prerequisites: Communications media majors only and COMM 395 Students compile and present a series of works produced through previous communications media courses and activities. The result is a portfolio suitable for presentation to a potential employer. The portfolio may include examples of student works from a variety of subject areas.
COMM 446 3-D Modeling and Animation for Games and Simulations 3c-0l-3cr Prerequisite: COMM 348 Examines the basic principles of three-dimensional computer modeling and animation. Learners are exposed to an overview of the history of computer-based animation and the fundamental theories behind digital animation and modeling. They also receive an introduction to the design and development of three-dimensional computer-based models and animation. Topics, e.g., aesthetics, as well as modeling, texturing, lighting, animating and rendering, rigid body dynamics, and manipulations of meshes through bones, are discussed. Forward and inverse kinematics, object hierarchies, and animation techniques, including frame-based, particle system, and physics-based/algorithmic, are described and applied.	COMM 480 Seminar in Communications Media 3c-0l-3cr Prerequisites: Junior or senior standing, other prerequisites as appropriate to course content A seminar in selected communications issues or problems. Includes the reading and review of the current literature as appropriate to the major topic presented in the seminar. COMM 481 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

COMM 493 Internship**9cr**

Prerequisites: COMM 395, 2.0 overall GPA and department approval. Supervised professional summer work experience in communications media. Internship sites reflect the academic goals of the department and are approved and administered by a department coordinator. Location, duties, duration of internship, and work hours are tailored to students' career goals. Sites represent a broad spectrum of communications and media in business, education, health, or other agencies. Students must complete 360 hours of internship work experience and a culminating internship project. A maximum of 15 credits of internship and/or practicum are permitted toward a degree program. Students whose internship responsibilities include regular contact with minors are required to take the Protection of Minors Training. All internship sites are required to be compliant with University internship policies and requirements.

COSC: Computer Science**Department of Computer Science****College of Natural Sciences and Mathematics****COSC 101 Computer Literacy****3c-0l-3cr**

An introductory course providing fundamental understanding of computers. Familiarizes students with the interaction of computer hardware and software. Emphasizes the application of microcomputers, the use of productivity software (word processing, spreadsheet management, file and database management, presentation graphics, web browsers, search strategies, and e-mail), and the social and ethical aspects of the impact of computers on society. (Does not count toward computer science major.) Note: cross-listed as BTED/IFMG 101. Any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

COSC 105 Fundamentals of Computer Science**3c-0l-3cr**

The first course for computer science majors. Required of all computer science students; appropriate for other Natural Sciences and Mathematics students. Topics include the fundamental concepts of computer architecture, algorithm development and analysis, programming languages, software engineering, data organization and representation, and systems software. A hands-on introduction to computer usage with an emphasis on terminology and the underlying connections within the discipline.

COSC 108 Introduction to Programming via Alice**3c-0l-3cr**

An introduction to the development of algorithmic solutions to a variety of problems and the development of computer programs to implement the solutions. The Alice programming language and interactive development environment is incorporated to introduce fundamental algorithmic/programming concepts including variables, assignments, conditionals, loops, functions, and arrays through an interactive movie animation paradigm. These concepts are then applied to a standard programming language. Includes an introduction to the Java programming language. (May not receive credit for both COSC 108 and 110.)

COSC 110 Problem Solving and Structured Programming**3c-0l-3cr**

An introduction to the development of algorithmic solutions to a variety of problems and the development of computer programs to implement the solutions. Explores standard programming structures used to introduce fundamental algorithmic/programming concepts including variables, assignments, conditionals, loops, functions, and arrays and their role in problems solving. Emphasizes structured programming in the development of algorithm solutions to common problems. Object-oriented paradigm is introduced at a basic level.

Cyber Wellness**3c-0l-3cr**

Investigates the different categories of cyber wellness and how they affect emotional, physical, social, and intellectual wellness. Focuses on demonstrating intellectual agility and creativity in order to maintain physical wellness while using technology. Examines the effect technological changes have had on various disciplines and their impacts on society in relation to health and wellness. Discusses theories and principles related to the physical, mental, social, and emotional aspects of personal computer usage

including cyberspace. Completion of COSC 143 fulfills the Liberal Studies Dimensions of Wellness requirement. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

COSC 201 Internet and Multimedia**3c-0l-3cr**

Prerequisite: BTED/COSC/IFMG 101 or prior exposure to word processing and electronic mail

Focuses on the evaluation of information and multimedia resources available on electronic networks when doing research in an area of one's choice. An information literacy course for students to gain a more in-depth understanding of the information resources available electronically and of how to utilize them more effectively in communicating. Students learn how to access and utilize these resources for two-way communications and support for decision making while incorporating selected elements in multimedia presentations of their own design. (BTED/COMM/COSC/IFMG/LIBR 201 may be used interchangeably for D/F repeats and may not be counted for duplicate credit.)

COSC 210 Object-Oriented and GUI Programming**3c-0l-3cr**

Prerequisite: COSC 108 or 110

An in-depth introduction to the Object-Oriented Programming (OOP) paradigm, including encapsulation, inheritance, and polymorphism. Focuses on designing, implementing, and using objects. Includes an introduction to Graphical User Interface (GUI) design and programming.

COSC 220 Applied Computer Programming**4c-0l-4cr**

Prerequisite: COSC 110 or equivalent

Structured programming principles and techniques, as implemented through the ANSI COBOL language; program design using top-down techniques; program and project documentation; introduction to sequential and random file algorithms and integrated file systems.

COSC 250 Introduction to Numerical Methods**3c-0l-3cr**

Prerequisites: COSC 110, MATH 121 or 125

Algorithmic methods for function evaluation, roots of equations, solutions to systems of linear equations, function interpolation, numerical differentiation, and integration; and use spline functions for curve fitting. Focuses on managing and measuring errors in computation. Also offered as MATH 250; either COSC 250 or MATH 250 may be substituted for the other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

COSC 281 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

COSC 300 Computer Organization and Assembly Language**3c-0l-3cr**

Prerequisite: COSC 110 or equivalent

A discussion of the basic computer architecture elements: gates, combinational and sequential logic, hardware arithmetic, CPU, and memory structure. An examination of the languages of machines: representation of data, addressing techniques, symbolic coding, assembly, and linking. Problem solving using assembly language.

COSC 310 Data Structures and Algorithms**3c-0l-3cr**

Prerequisite: COSC 210

Fundamental concepts of data design and implementation, data abstraction, data structures, arrays, linked-lists, stacks, queues, recursion, trees, graphs, and hashing. Also covers sorting algorithms, divide and conquer techniques, greedy methods, and analysis of algorithms. The object-oriented paradigm is employed using an object-oriented language.

COSC 316 Host Computer Security 3c-0l-3cr

Prerequisite: COSC 110 or equivalent course, as approved by instructor
An introduction to the theory and concepts of host computer security. Topics include security and policy guidelines, attack strategies and attacker profiles, users and groups security, file systems and security, integrity management, cryptography basics, backup utilities, auditing and logging, and strategies for defending user accounts. A practical, hands-on course.

COSC 319 Software Engineering Concepts 3c-0l-3cr

Prerequisite: COSC 310 or instructor permission
Software engineering concepts include the collection of tools, procedures, methodologies, and accumulated knowledge about the development and maintenance of software-based systems. Strongly suggested for any student planning to take an internship in computer science. After an overview of the phases of the software life cycle, current methodologies, tools, and techniques being applied to each phase are discussed in depth with localized exercises given to reinforce learning of concepts.

COSC 341 Introduction to Database Management Systems 3c-0l-3cr

Prerequisites: COSC 110, 210
Provides fundamental knowledge of, and practical experience with, database concepts. Includes study of information concepts and the realization of those concepts using the relational data model. Practical experience gained in designing and constructing data models and using SQL to interface to both multiuser DBMS packages and to desktop DBMS packages.

COSC 345 Computer Networks 3c-0l-3cr

Prerequisites: COSC 110; MATH 121 or 125; and MATH 214 or 216 or 217; or equivalents
Covers data communications, computer network architectures, functions of various network layers, communication protocols, internetworking, emerging high-speed networks.

COSC 352 LAN Design and Installation 3c-0l-3cr

Prerequisite: BTST 273 or IMFG 250 or COSC 108 or 110
A study of fundamental local area networking concepts. A detailed study of the basics of local area network (LAN) technology. A comparative study of commercially available LAN systems and products. Features a hands-on laboratory implementation of a LAN. Cross-listed as IFMG 352. Either course may be substituted for the other for D/F repeats but may not be taken for duplicate credit.

COSC 355 Computer Graphics 3c-0l-3cr

Prerequisites: Grade of "C" or better in COSC 310 and junior status
Introduces computer graphics hardware and software. Explores and implements 2-D and 3-D modeling and transformations, viewing transformations, projections, rendering techniques, lighting, and shading using a current cross-platform 3-D graphics API. Includes creation of complex, photorealistic images, and animation principles.

COSC 356 Network Security 3c-0l-3cr

Prerequisites: COSC 316 and either COSC 345 or COSC/IFMG 352
Explores mechanisms for protecting networks against attacks. Emphasizes network security applications that are used on the Internet and for corporate networks. Investigates various networking security standards and studies methods for enforcing and enhancing those standards.

COSC 362 Unix Systems 3c-0l-3cr

Prerequisite: COSC 310 or instructor permission
An introduction to the features, syntax, applications, and history of Unix. Coverage includes utilities, system administration, development environments, and networking concerns including distributed systems, client-server computing, and providing Web services.

COSC 365 Web Architecture and Application Development 3c-0l-3cr

Prerequisites: COSC 310 and 341 or instructor permission
Covers the fundamental architecture of Internet systems and the process of developing computer applications running on the Internet in general and on the World Wide Web in particular. Students gain a basic understanding of

the TCP/IP protocols and the client/server technology. Methods, languages, and tools for developing distributed applications on the Internet are evaluated. Programming projects developing distributed applications, using a representative suite of development tools and languages, are an integral part of this course.

COSC 380 Seminar on the Computer Profession and Ethics 2c-0l-2cr

Prerequisite: Instructor permission
Reading, review, and discussion of the current literature of computer science and industry trade journals; effective oral presentations; employment prospects. Topics on computer ethics and review of case studies on computer ethics from professional journals with discussion of the issues involved. Should be taken the semester before an internship or the first semester of the senior year. Should not be taken at the same time as COSC 480.

COSC 405 Artificial Intelligence 3c-0l-3cr

Prerequisite: Grade of "C" or better in COSC 310
Introduces the field of artificial intelligence. Explores and implements solutions using classical and modern artificial intelligence techniques. Includes state space search, logical inference, expert systems, optimization, knowledge representation, machine learning, handling uncertainty, and soft computing.

COSC 410 Computer Architecture 3c-0l-3cr

Prerequisites: COSC 300, 310
Introduces the underlying working principles of electronic computers. Discusses the organization and architecture of computer components. Expounds on details of memory hierarchy, I/O organization, computer arithmetic, processor and control unit design, instruction set architecture, instruction-level parallelism, and the ways functional components interact together.

COSC 420 Modern Programming Languages 3c-0l-3cr

Prerequisite: COSC 310
A comparative survey of programming language paradigms. Includes an examination of the properties, applications, syntax, and semantics of selected object-oriented, functional, and declarative programming languages.

COSC 424 Compiler Construction 3c-0l-3cr

Prerequisites: COSC 300, 310
Relates the formal concepts of automata and language theory to the practicality of constructing a high-level language translator. The structures and techniques used in lexical analysis, parsing, syntax-directed translation, intermediate and object code generation, and optimization are emphasized.

COSC 427 Introduction to Cryptography 3c-0l-3cr

Prerequisites: COSC 310, MATH 122 or 123
Fundamental concepts of encoding and/or encrypting information, cryptographic protocols and techniques, various cryptographic algorithms, and security of information are covered in depth.

COSC 429 Digital Forensics 3c-0l-3cr

Prerequisites: COSC 110 or equivalent programming course, junior standing or instructor permission
Takes a detailed, hands-on approach to the use of computer technology in investigating computer crime. From network security breaches to child pornography, the common bridge is the demonstration that particular electronic media contains incriminating evidence. Using modern forensic tools and techniques, students learn how to conduct a structured investigative process to determine exactly what happened and who was responsible, and to perform this investigation in such a way that the results are useful in criminal proceedings. Real-world case studies are used to provide a better understanding of security issues. Unique forensics issues associated with various operating systems including Linux/Windows operating systems and associated applications are covered.

COSC 430 Introduction to Systems Programming 3c-0l-3cr

Prerequisites: Grade of "C" or better in COSC 300 and 310 or instructor permission

An in-depth introduction to a systems programming, system programming language(s) and application of those language(s) to systems-level problems. The focus is on programming constructs that are closely aligned with the architecture of a digital computer including those providing portability between platforms, dynamic allocation and management of virtual memory, complex in-memory data structures, reading/writing binary data using sequential and random access, pointer arithmetic/manipulation, and interaction between threads/processes.

COSC 432 Introduction to Operating Systems 3c-0l-3cr

Prerequisites: COSC 300, 310 or equivalents

An introduction to the principles of operating system design and implementation. Topics include interrupt service, process states and transitions, spooling, management of memory and disk space, virtual storage, scheduling processes and devices, and file systems.

COSC 454 Information Assurance Administration 3c-0l-3cr

Prerequisite: COSC 316 or instructor permission

Explores the various issues pertinent to maintaining acceptable levels of information security within organizations. Addresses issues involved in administering and managing information security systems. Intended to raise awareness of information security issues across organizations.

COSC 460 Theory of Computation 3c-0l-3cr

Prerequisite: COSC 310 or instructor permission

Formal methods for describing and analyzing programming languages and algorithms. Covers Backus-Naur forms, productions, regular expressions, introduction to automata theory, Turing machines, and recent concepts in algorithm theory computability.

COSC 465 Distributed Processing and Web Services 3c-0l-3cr

Prerequisites: COSC 365 or 310 and instructor permission

An advanced study into architecture of Internet systems and the process of developing distributed computer applications running on the Internet and/or other networks. Presents an in-depth understanding of distributed processing technologies including socket programming, RPC, RMI, EJBs, DCOM, .NET, SOAP, and Web services. Emphasis is placed on the use of XML to support multi-party heterogeneous distributed applications and includes XML fundamentals (e.g., DTDs, XML schemas, XPath, XSLT, SAX, and DOM), and Web services (e.g., SOAP, WSDL, UDDI, and ebXML). Students complete hands-on projects utilizing mentioned technologies.

COSC 473 Software Engineering Practice 3c-0l-3cr

Prerequisite: COSC 319 or instructor permission

Planning, design, and implementation of large software systems using software engineering techniques. Students work on project teams on real or realistic software development projects. Credit for either COSC 473 or 493, but not both, may count toward computer science major requirements for graduation; the other course credits will be counted as free electives.

COSC 480 Seminar on Technical Topics 0c-1l-1cr

Prerequisites: See text below

Reading, review, and discussion of the current literature of computer science and industry professional and technical journals; oral presentations. Should be taken the last semester of the senior year. Should not be taken at the same time as COSC 380.

COSC 481 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

A seminar in advanced topics of computer science; content varies depending on interests of instructor and students. May be repeated for additional credit. Special Topics numbered 481 are primarily for upper-level undergraduate students.

COSC 482 Independent Study var-1-4cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval based on academic appropriateness and availability of resources.

COSC 493 Internship in Computer Science var-6-12cr

Prerequisites: COSC 105, 220 (except Languages and Systems Track), 300, 310, 319, 341, 380, other courses depending on type of internship position desired, completion of application, and selection by a faculty committee. COSC 319, 341, and 380 prerequisite may be waived when registering for first 6cr.

Positions with participating companies provide students with paid experience in computer science under supervision of the companies and faculty. Requirements include three on-site consultations (one during first 6cr and two in final 6cr), two university consultations (one during first 6cr and one in final 6cr), completion of progress reports, oral presentation (final 6cr only), and a final cumulative paper (final 6cr only). An internship is offered only to students who have completed their sophomore year. No more than 3cr of the first 6cr of COSC 493 and 3cr of the last 6cr of COSC 493 may be applied toward the credit-hour requirement for a major in computer science. Internship can be completed as one 12cr unit over a minimum of 23 weeks or in 6cr units each over a minimum of 12 weeks. (Writing-intensive course. As such, an internship requires completion of designated writing-intensive components.)

COUN: Counselor Education
Department of Counseling
College of Education and Communications

COUN 253 Counseling in School Settings 3c-0l-3cr

An elective course providing in-service teachers and school personnel, other than counselors, with a basic understanding of the knowledge, information, and skills appropriate to counseling with individuals and groups. Restricted to peer tutors.

CRIM: Criminology
Department of Criminology and Criminal Justice
College of Health and Human Services

CRIM 101 Crime and Justice Systems 3c-0l-3cr

Introduces the field of criminology through the examination of historical data, statistical information, theories of criminal causation, social control of behavior, development of laws, evaluation of criminal justice system policies, procedures, and trends. Students learn the terminology of the field, gain an awareness of the methods of inquiry utilized in the field, and have the opportunity to examine personal attitudes and values regarding crime and responses to crime.

CRIM 102 Survey of Criminology 3c-0l-3cr

Provides an understanding of the discipline of criminology through an examination of its theories, basic assumptions, and definitions.

CRIM 205 Policing and the Community 3c-0l-3cr

Prerequisite: CRIM 101 or 102

Introduces the history, function, and role of policing in American society. The multidimensional work of policing is emphasized with particular attention to strategies employed to combat and prevent crime through computer technology and advancements in nonlethal and lethal methods. Organizational and personal selections also are covered, as these are intimately connected to the structure and composition of the communities serviced. Practical and critical approaches to law enforcement are undertaken to explore prevailing and dissenting perspectives on the issues covered.

CRIM 210 Criminal Law 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

A study of the history and sources of criminal law coupled with an analysis of the substantive elements of specific crimes.

CRIM 215 Survey of Courts and the Criminal Justice System 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

Examines the historical background, the traditions, and the legal principles that underlie the courts as an integral component of the American system of criminal justice. Both differences and similarities inherent within the state and federal court processes are analyzed, and the procedures through which the criminal courts uphold the basic rights and liberties of all United States citizens, both victims and the accused, are explored. The dynamics of the judiciary are considered through examination of the critical foundation of the judicial process. A primary focus is placed on understanding the respective roles played by judges, prosecuting attorneys, defense counsel, police, probation officers, and other court-related personnel in the criminal court process.

CRIM 225 Survey of Corrections 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

States and emphasizes the role of corrections in the social control of human behavior. Includes the history of corrections, classic and contemporary thought about the role of corrections in the criminal justice system, and a survey of correctional methods and alternatives with an emphasis on the use of incarceration.

CRIM 235 Survey of Juvenile Justice and Juvenile Law 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

Provides an understanding of the juvenile justice system and the various cases and legislative initiatives that have affected juvenile justice policy, in addition to examining the evolution of the juvenile justice system and the transformation of the current issues in juvenile justice in the United States. Attention is also focused on juvenile justice policies and procedures in other countries.

CRIM 255 Law, Social Control, and Society 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

The evolution and development of the modern legal system. Topics include civil, criminal, and administration law, the legal profession, legal systems in American society, and the law as one of many instruments of social control and social change.

CRIM 281 Special Topics var-1-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

CRIM 306 Criminological Research Methods 3c-0l-3cr

Prerequisites: CRIM 101, 102, junior standing

An introduction to the basic criminological research methods designed to prepare the student to understand and participate in quantitative and qualitative research.

CRIM 321 Cybersecurity and Loss Prevention 3c-0l-3cr

Prerequisite: CRIM 101 or 102

Addresses the cybersecurity threat from a more comprehensive standpoint. Challenges students to recognize and understand security concerns from multiple perspectives, ranging from the insider threat to threats involving the actual physical components. Exposure to a design methodology, associated system components modules, and basic security principles is featured. Students also are exposed to the private and public responses to computer security problems, including the insider threat, domestic and foreign terrorism, and a number of unique computer crimes and solutions to deal with these crimes. The importance of a sound security policy in the overall management of any organization is addressed.

CRIM 323 Cybersecurity and the Law 3c-0l-3cr

Prerequisite: CRIM 101 or 102

Examines the scope of cybercrime and its impact on today's system of criminal justice. Includes cybercrime and the Bill of Rights, computer-based economic crime, electronic commerce, ethical challenges, and the Computer Fraud and Abuse Act. Includes an analysis of the legal considerations facing law enforcement and cybersecurity professionals who deal with the problem of discovering, investigating, and prosecuting cybercrime.

CRIM 344 Terrorism 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or instructor permission

An in-depth study of the legal and international issues that the United States faces in response to combating international terrorism. The emphasis is placed on identifying causes of terrorism and the most plausible threats; terrorist networks, their commonalities and differences, and the difficulty in countering; and determining appropriate responses, to include political and legal implications, threat analysis, physical security, and target hardening. (Also offered as PLSC 344; may not be taken as duplicate credit.)

CRIM 354 White-Collar Crime 3c-0l-3cr

Prerequisite: CRIM 101 or 102

An introduction to various topics and issues relating to white-collar crime. Theories and measurements of white-collar, corporate, organizational, occupational, workplace, and organized crimes are presented and compared. Prevention, legal issues, and control strategies are presented.

CRIM 374 Environmental Crime and Justice 3c-0l-3cr

Prerequisite: CRIM 101 or 102

Introduces the developing area of criminological solutions to environmental problems. Issues addressed include the nature of environmental offenders and victims, the variety of approaches to achieving environmental justice, and criminal justice solutions to specific environmental problems.

CRIM 384 Violence and Victimology 3c-0l-3cr

Prerequisite: CRIM 101 or 102

Introduces the leading theories and research in the area of violent criminal behavior and victimization. A special emphasis is on patterns of violent offending and victimization over time, victim-offender relationships, and the experience of victims in the criminal justice system. Addresses major violent crimes including murder, rape, robbery, and assault.

CRIM 394 Crime and Delinquency Prevention 3c-0l-3cr

Prerequisite: CRIM 101 or 102 or departmental permission

Examines various crime and delinquency prevention policies and programs. Topics include the historical development of crime and delinquency prevention methods, theoretical applications to prevention efforts, and research findings on program effectiveness. The importance of research design in evaluating prevention programs also is considered.

CRIM 400 Theoretical Criminology 3c-0l-3cr

Prerequisites: CRIM 101, 102, junior standing

A review and critical analysis of the major criminological theories beginning with the Classical School; psychological, sociological, economic, biological, and political theories of crime and its causes are included.

CRIM 401 Contemporary Issues in Criminology 3c-0l-3cr

Prerequisites: CRIM 101, 102, junior standing

An examination of the nature and extent of crime in modern western society. Emphasizes issues selected from, but not limited to, emerging patterns of violence, organized crime, white-collar crime, victimless crime, corruption, and those crime control strategies deemed appropriate in a democracy.

CRIM 403 Dilemmas in Criminology and Criminal Justice 3c-0l-3cr

Prerequisites: CRIM 101, 102, junior standing

An overview of prominent ethical issues facing professionals in criminology and criminal justice, with an emphasis on encouraging individual students to explore their own ethical and moral systems and how they make ethical/moral decisions. Primarily discussion/seminar oriented.

CRIM 410 Race, Ethnicity, Social Structure, and Crime 3c-0l-3cr**Prerequisites:** CRIM 101, 102

Introduces the art of thinking critically about the social construction of race, ethnicity, and social class in crime and crime control, with special focus on the United States.

CRIM 420 Media Portrayal of Crime 3c-0l-3cr**Prerequisite:** CRIM 101, JRNL 105, or COMM 101, or departmental permission

An examination of the portrayal of crime in the media (television, film, newspapers, music, video games, electronic/Internet). This includes, but is not limited to, victims, offenders, criminal justice actors, and the criminal justice system. Of importance is how the media select what is newsworthy and how they describe and/or alter criminal justice issues. Attention is paid to the media's influence on perceptions of crime, the ethics behind the media's perceptual influence, criminology and criminal justice issues of the general population and the resultant criminal justice policies. Seminar based. (Also offered as COMM 420; may not be taken as duplicate credit.)

CRIM 450 Women and Crime 3c-0l-3cr**Prerequisite:** CRIM 101 or 102

A study of the nature and extent of women's crime, theories of female criminality, processing of women offenders through the criminal justice system, the response of police and court officials to women as victims of crime, and opportunities for women as employees in criminal justice agencies.

CRIM 470 Comparative Study of Justice 3c-0l-3cr**Prerequisite:** CRIM 101 or 102

A comparison of American systems of administration of justice with those of other nations.

CRIM 482 Independent Study in Criminology var-1-3cr**Prerequisites:** CRIM 101, 102, prior approval through advisor, faculty member, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

CRIM 493 Internship var-3-12cr**Prerequisites:** CRIM 101, 102, 12cr from CRIM courses, 2.5 overall GPA, and junior standing

A structured field placement designed to broaden the educational experience through observation and participation in work assignments in government or private sectors. Six credits can be applied to the major requirements.

CRLG: Critical Languages
College of Humanities and Social Sciences

Critical Languages are offered in four levels. See program description in the opening section of the College of Humanities and Social Sciences. Specific languages are offered as available.

CRLG 101–120 Critical Languages I 3c-0l-3cr

Basic vocabulary and pronunciation in the target language. Oral/aural skills are stressed.

CRLG 101 Arabic I	CRLG 113 Swedish I
CRLG 109 Korean I	CRLG 114 Hebrew I
CRLG 112 Russian I	CRLG 115 Swahili I

CRLG 151–170 Critical Languages II 3c-0l-3cr**Prerequisite:** Level I or acceptable equivalent

A continuation of the first-semester course. Depending on the language being studied, reading and writing may be introduced at this level.

CRLG 151 Arabic II	CRLG 162 Russian II
CRLG 155 Hindi II	CRLG 163 Swedish II
CRLG 159 Korean II	CRLG 164 Hebrew II
CRLG 161 Portuguese II	CRLG 165 Swahili II

CRLG 201–220 Critical Languages III 3c-0l-3cr**Prerequisite:** Level II or acceptable equivalent

At this first intermediate level, students begin to develop a degree of oral proficiency that varies with the language studied. Reading and writing are studied in all languages by this level.

CRLG 201 Arabic III	CRLG 212 Russian III
CRLG 202 Chinese III	CRLG 214 Hebrew III
CRLG 209 Korean III	CRLG 215 Swahili III

CRLG 251–270 Critical Languages IV 3c-0l-3cr**Prerequisite:** Level III or acceptable equivalent

By the end of this course, the student should be able to communicate in simple terms with an educated native speaker on a topic with which the student is familiar. Ability in reading and writing varies with language.

CRLG 251 Arabic IV	CRLG 262 Russian IV
CRLG 259 Korean IV	CRLG 264 Hebrew IV

DANC: Dance
Department of Theater and Dance
College of Fine Arts
DANC 102 Introduction to Dance 3c-0l-3cr

Explores dance as communication, ritual, social engagement, entertainment, and as an art form. Dance history, genealogy, aesthetics, critical analysis and response, and the creative process are examined. Class experience includes viewing and critical analysis of professional dance works, attending at least two live productions, and engaging in the creative process in practice and performance.

DANC 150 Fundamentals of Dance 3c-0l-3cr

A basic dance technique that sequentially develops the elements of movement (space, time, force) into a variety of dance genres and period styles. Covers special care and safety of the instrument—the body.

DANC 250 Beginning Modern Dance 3c-0l-3cr

Beginning modern dance technique. An introduction to the beginning elements of the choreographic process. Examines the historical development and cultural influences on the changing philosophies of modern dance performance. Performance of creative work required.

DANC 260 Beginning Jazz Dance 3c-0l-3cr

Beginning jazz technique, dynamics, and selected styles that reflect an era or culture characteristic of jazz movement and music from the 1920s through the present. An introduction to the beginning elements of the choreographic process. Performance of creative work required.

DANC 270 Beginning Ballroom and Tap Dance 3c-0l-3cr

A sequential development of beginning tap and ballroom dance techniques in the context of the historical development and period styles. Performance of creative work is required.

DANC 280 Beginning Ballet 3c-0l-3cr

A sequential development of beginning barre and center techniques that progress to link movement phrasing into dance sequences and choreography. The historical periods of development and the status of the art today are examined in a cultural context, which includes gender and minority influences. Performance of creative work is required.

DANC 281 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

DANC 290 Ethnic Dance 3c-0l-3cr

Includes dance techniques from a variety of indigenous forms from western and eastern cultures. Presented in the historical and social context. An emphasis is given to the needs of theater production.

DANC 351 Choreography **3c-0l-3cr**

Prerequisites: Three introductory- or advanced-level dance classes from DANC 250, 260, 270, 280, 290, 485, or instructor permission
Introduces the necessary choreographic tools needed to manipulate dance as a medium to create dance works. Students learn and use various approaches to the choreographic process to create dance works, one of which will be presented in a public showing at the end of the semester.

DANC 353 Dance Curriculum and Instruction **3c-0l-3cr**

Prerequisites: Three introductory- or advanced-level dance classes from DANC 250, 260, 270, 280, 290, 485, or instructor permission
Introduces the necessary teaching skills and curriculum development needed to understand the pedagogical structure for teaching dance. Students learn the approaches to teaching that are unique to dance and will learn to design dance curriculum.

DANC 355 Dance Production: Administration to Creation **3c-0l-3cr**

Prerequisites: Two introductory- or advanced-level dance classes from DANC 250, 260, 270, 280, 290, 485, or instructor permission
A sequential development of the dance production process from audition to opening, focusing on the practical application to private studio and academic and professional settings. Explores the evolution of dance production and the future of dance, from both administrative and artistic perspectives, taking into consideration the constantly changing world of technology.

DANC 485 Dance Studio **3c-0l-3cr**

Prerequisite: DANC 250 or 260 or 270 or 280 (beginning technique class taken must be the specific dance genre of the Dance Studio class offered); or by instructor permission
Further the development of the dancer at the intermediate level of a specified genre of dance. Development in dance requires the integration of both technique and artistic development. The specific genres vary from semester to semester, including modern, ballet, tap, and jazz as alternating semester options. May be repeated with a different focus each time.

DISB: Disability Services
Department of Communication Disorders, Special
Education, and Disability Services
College of Education and Communications

DISB 201 Customized Employment: Disability Awareness **3c-0l-3cr**

A historical perspective and stereotypical treatment of persons with disabilities, the impact of community integration and empowered living for persons with disabilities, the capabilities and challenges faced by persons with various disabilities. Also considers how current issues, such as health care, housing, Social Security, and employment, have on the lives of persons with disabilities.

DISB 302 Customized Employment: Service Coordination **3c-0l-3cr**

Prerequisite: DISB 201
An overview of the Intellectual and Developmental Disability Service System, consumer controlled services and available waivers for persons with disabilities. Also makes the distinction between supported employment and customized employment and the supports available in print, via the Intellectual and Developmental Disability Service System agencies and legislation.

DISB 403 Customized Employment: Assessment and Job Development **3c-0l-3cr**

Prerequisite: DISB 302
A holistic approach to providing job-coach services in community setting. Content emphasizes understanding the processes involved in bringing a consumer through the Vocational/Transition Assessment process, developing and analyzing potential jobs based on consumer assessment data, the development and implementation of accommodations for consumers with behavioral/psychiatric disorders, as well as the impact the American with Disabilities Act has on the provision of Job Coaching services.

DISB 404 Customized Employment: Systematic Instruction and Fading **3c-0l-3cr**

Prerequisite: DISB 403
A holistic approach to providing job coach services in community setting. Content emphasizes understanding the three essential components of systematic instruction, the development and implementation of instructional programs that include comprehensive fading and follow-up plans and the collection, graphing, and analysis of the assessment, instructional, and follow-up data.

DISB 440 Ethical and Professional Behaviors **1c-0l-1cr**

Prerequisites: Disability services major, junior standing, 2.75 GPA
Emphasizes the professional standards and ethical behaviors of disability services professionals. Covers information about and the laws surrounding the ages of birth to three years and over 21 years of age. Students are exposed to the wide range of services in which they can be employed.

DISB 493 Internship/Field Training **var-12cr**

Prerequisites: DISB 440 and 2.75 GPA
Allows the intern to demonstrate competencies working in a public or private agency providing educational/rehabilitation services. This may include, but not be limited to, writing and analyzing comprehensive evaluation reports, counseling individuals with disabilities, understanding agency and/or service delivery responsibilities and limitations, referral and follow-up processes, and use of various assessment approaches in evaluating an individual's capacity to function independently in a broad range of community settings. (Offered as EDEX 493 before 2017-18.)

DVST: Developmental Studies
Department of Developmental Studies
College of Education and Communications

DVST 070 Reading Skills for College Study **3c-0l-3cr**

Note: Students who score 77 and below on the COMPASS post-test (administered at the end of this course) are required to enroll in DVST 110 the following semester.
Assists in the development of college-level reading skills with an emphasis on textbook reading. Includes literal and critical comprehension skills, vocabulary development, and reading efficiency. Carries institutional, non-degree credit, and attendance is required.

DVST 083 Introduction to College Math **3c-0l-3cr**

Prerequisite: May not be taken after successfully completing any course offered by the Mathematics Department without written approval of the Department of Developmental Studies chairperson
For students who need to develop the basic mathematical skills that are essential to success in more advanced college-level work. Content material includes computational skills of whole numbers, fractions, percent, data analysis, graphs, statistics, properties and operations on real numbers, simplifying algebraic expressions, and solving equations and inequalities. Carries institutional, nondegree credit. (Offered as DVST 095 before 2015-16.)

DVST 093 Developmental Mathematics, Elements of Algebra **1c-0l-1cr**

Prerequisite: May not be taken after successfully completing any course offered by the Mathematics Department without written approval of the Department of Developmental Studies director
Introduces algebraic concepts and algorithms with a comparison of arithmetic algorithms to associated algebraic algorithms. Topics include properties and operations on real numbers, simplifying expressions, order of operations, solving equations and inequalities, formulas, exponential and scientific notation, and operations on polynomials. Carries institutional, nondegree credit. Attendance is required.

DVST 110 Introduction to Critical Reading and Thinking **2c-0l-2cr**

Focuses on the development and mastery of skills related to the processes of understanding, analyzing, and assessing college-level texts and other academic readings. Synthesizes written information from a variety of sources and content areas. *Note:* For sections paired with specific content-area course sections, students are required to register for both courses.

DVST 150 Introduction to Higher Education 1c-0l-1cr

Introduces the system of higher education and skills that promote effective educational planning and academic success. Orients students to the systems, resources, policies, and procedures of IUP and to the Liberal Studies curriculum. Emphasizes goal setting, decision making, self-monitoring, and time-management skills.

DVST 160 Learning Strategies 1c-0l-1cr

Encourages students to develop and use effective and efficient study strategies on a consistent basis. Students examine academic goals and implement study strategies to help achieve those goals. Includes the topics of goal setting and self-monitoring, learning styles, test preparation and test taking, lecture and textbook note taking, time management and concentration, and general strategies for learning. Students are required to give evidence of application of the study strategies to other courses in which they are currently enrolled. Active participation in class meetings is expected.

DVST 170 Career Exploration 1c-0l-1cr

Introduces the theoretical and practical framework with which to explore careers compatible with overall academic skills, aptitudes, and life goals. Students examine the world of work, assess their interests and abilities, and make realistic decisions on academic majors and careers. (Cross-listed as ADVT 170. These courses may be substituted for each other and be used interchangeably for D/F repeats but may not be counted for duplicate credit.)

DVST 200 Academic Transition Seminar 1c-0l-1cr

Prerequisite: Recommended for students from regional campuses
Acclimates the student to the curricular and cocurricular experience of the main campus of IUP. Emphasizes campus systems and resources, the application of theories of change as related to transition, and major and career planning as lifelong learners. Recommended for transfer students, particularly targeting students moving from a satellite campus to the Indiana campus.

DVST 250 Role of the Peer Educator: Theory, Practice, and Assessment 1c-0l-1cr

Prerequisite: Instructor permission
Prepares selected students for the role of a peer educator within the higher education setting. Topics include student learning and problem solving, facilitative helping and interpersonal communication, peer leadership, and assisting peers with how to effectively and efficiently succeed at the college level. (Roles include supplemental instruction leader, tutor, peer advisor, workshop leader.)

ECED: Early Childhood Education
Department of Professional Studies in Education
College of Education and Communications

Note: Early childhood education courses are restricted to majors with a 3.0 cumulative GPA.

ECED 112 Childhood Development Birth–Age 5 3c-0l-3cr

Presents the foundations, theoretical, and practical aspects of the development of young children, focusing on various learning theories/theorists and the developmental stages and needs of children from birth through age five. Examines the various stages of child development with a focus on a review of the research, theories, and theoretical program models, and types of early childhood programs; discusses available community resources, professional organizations, and standards of ethical behavior and practice all in an exploration of child development and contemporary educational, cultural, social, and emotional issues for children, ages birth to five and their families.

ECED 117 Family, Community, and School Relationships in a Diverse Society 2c-0l-2cr

Students develop a strong understanding and deep appreciation of the diversity among families, communities, and school cultures in the United States. Students gain the ability to locate and develop curricular materials and teaching strategies appropriate to this country's diversity.

ECED 200 Introduction to Early Childhood Education 3c-0l-3cr

Prerequisite: Early childhood education/special education major or early childhood education major

Introduces prospective teachers to the historical, sociological, and political aspects of early childhood education. An emphasis is placed on appreciating diversity in the early childhood classroom and on developing keen observation strategies to both heighten understanding of children and evaluate programs that serve them.

ECED 215 The Developing Child: K-4th Grade 3c-0l-3cr

Introduces the interrelationships among the various aspects of child development in grades K-4, its relevant theories and educational applications. Through literature review, critique of theories, observation, and large and small group activities, students learn child development principles and how they may be applied in K-4 educational settings to foster successful learning. (Offered as ELED 215 Child Development before 2015-16.)

ECED 220 Differentiating Literacy Instruction through Children's Literature 3c-0l-3cr

A survey of children's literature for children from preschool through grade 4. Describes selection and evaluation criteria for choosing children's literature to differentiate literacy instruction. Emphasizes strategies for differentiating instruction to develop children's literacy skills and integrating children's literature throughout the early childhood curriculum. Stresses motivational approaches for encouraging children's engagement with and response to literature.

ECED 221 Literature for the Young Child and Adolescent 3c-0l-3cr

Prerequisite: Early childhood education/special education major
A survey of literature for children from preschool to adolescence. Selection and evaluation criteria for various genres, including visual and literary elements, are the foundation. Emphasis will also be placed on multicultural literature and literature for diverse learners. Stresses motivational approaches for encouraging children's engagement with and response to literature.

ECED 250 Language Development 3c-0l-3cr

Prerequisite: Early childhood education/special education major or early childhood education major
Acquaints students with the process of children's language acquisition and development through expressive skills and language comprehension. Observation, documentation, and assessment of language development across the areas of listening, speaking, writing, drawing, and reading are explored from both a theoretical and practical perspective.

ECED 280 Maximizing Learning: Engaging All PreK to Grade 4 Learners 3c-0l-3cr

Prerequisites: Early childhood education/special education major or early childhood education major, admission to Teacher Education Step 1
Examines competencies specific to the science of teaching, the organization and management of functional learning environments, and the design, implementation, and evaluation of developmentally appropriate learning experiences. Areas explored include models of teaching, lesson and unit planning, and creating a classroom environment that is conducive to learning.

ECED 310 Science, Health, and Safety for All PreK to Grade 4 Learners 3c-0l-3cr

Prerequisites: Early childhood education/special education major or early childhood education major, admission to Teacher Education Step 1
Examines strategies for teaching science and health concepts; design of lessons that integrate science, health, and safety; and learning how to become role models for children. Students develop knowledge of how to design lessons with appropriate content and methods for young children.

ECED 351 Literacy for the Emergent Reader: PreK to Grade 1 Learners 3c-0l-3cr

Prerequisites: Early childhood education/special education major or early childhood education, admission to Teacher Education Step 1
Provides early childhood teachers with various strategies, techniques, and materials related to developing early literacy in children. Current research and practical applications are interwoven to ensure a systematic coverage of

the most recent methods and best practices. Focuses on the development of speaking, listening, reading, and writing skills for preK to grade 1 learners.

ECED 411 Social Studies for All PreK to Grade 4

Learners

3c-0l-3cr

Prerequisites: Early childhood education/special education major or early childhood education major, admission to Teacher Education Step 1
An overview of social concepts related to geography, history, economics, civics and government, and citizenship. Prepares teacher candidates to offer classroom instruction to all preK to grade 4 learners, which builds civic competence and enables students to use skills of collaboration, decision making, and problem solving.

ECED 425 Methods of Teaching and Assessing

Language Arts: Pre-K to Grade 4 Learners

2.5c-0l-2.5cr

Prerequisite: ECED 351

Emphasizes the art of communication as an interrelated process. The task of the early childhood teacher is to develop and integrate the language arts throughout the curriculum. Techniques for teaching and assessing developmentally-appropriate oral and written communication, spelling, handwriting, and vocabulary are presented. Special emphasis is given to developmental writing approaches. (Writing-intensive course)

ECED 451 Literacy for the Developing Reader:

Grades 2-4 Learners

3c-0l-3cr

Prerequisites: Early childhood education/special education major or early childhood education major, admission to Teacher Education Step 1
Provides preservice teachers with theoretical context, as well as various strategies, techniques, and materials related to teaching literacy skills, developing positive dispositions toward literacy, and fostering supportive environments for literacy development. Instructional issues, specifically related to teaching reading to young children, children with disabilities, and English language learners, are investigated. Contemporary research on theoretical perspectives and best practices, as well as practical application, is interwoven to ensure a balanced approach to the most effective instructional practices.

ECED 499 Advocacy and Collaboration in Diverse

Families and Communities

3c-0l-3cr

Provides students with understanding and skills in multicultural approaches to education that enable them to recognize and respect the diversities that all their students bring to school and to also become effective advocates as they collaborate successfully with diverse families and communities.

ECON: Economics

Department of Economics

College of Humanities and Social Sciences

ECON 101 Basic Economics

3c-0l-3cr

Scarcity, role of prices in determining production and the allocation of resources, business cycle analysis, policy options for reducing unemployment and inflation, economic role of government, international trade, and selected current economic problems are studied. For those who do not plan to take more than 3cr of economics. Note: May not be taken after successful completion of or concurrent registration in any other economics course.

ECON 121 Principles of Macroeconomics

3c-0l-3cr

Nature and methodology of economics; mixed capitalism and market economy; national income; employment theory, including economics of fiscal policy; money, banking, and Federal Reserve System; international trade and finance.

ECON 122 Principles of Microeconomics

3c-0l-3cr

Economics of the firm; theory of consumer demand; determination of price and output in different market structures; distribution of income; economic growth.

ECON 143 Financial Wellness

3c-0l-3cr

Theories and principles related to the physical, social, and emotional wellness aspects of individual money management. Information is focused on building a sound financial foundation as a college student and can be

applied throughout the life span to ensure future financial well-being. Successful completion fulfills the Liberal Studies Dimensions of Wellness requirement.

ECON 223 Economics of Crime

3c-0l-3cr

Economic analysis of criminal activity and its impact on the allocation of scarce resources. Uses fundamental economic models to explain crimes against people, property crime, "victimless crime," and organized crime.

ECON 239 Economics of Sports

3c-0l-3cr

Introduces and develops the economic way of thinking as it applies to the sports industry. Topics covered include the organizational structure of the major American sports leagues (e.g., revenue sharing, salary restrictions, and competitive balance), labor issues in sports (e.g., free agency, reserve clause, unions, strikes, and discrimination), the legal relationship between sports and government (e.g., the relationship between antitrust law and sports), and the issue of sports and public finance (e.g., location and financing of sports franchises and public ownership of stadiums and arenas).

ECON 281 Special Topics

var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

ECON 325 Monetary Economics I

3c-0l-3cr

Prerequisites: ECON 121, 122

Organization, operation, and economic significance of US monetary institutions; commercial banks and Federal Reserve System; survey of monetary theory and policy; mechanism of international payments.

ECON 326 Monetary Economics II

3c-0l-3cr

Prerequisite: ECON 325 or instructor permission

A detailed study of monetary theory; tasks of central banking; principal objectives of monetary policy; intensive study of recent monetary experience; complementary and competing aims of monetary and fiscal policy.

ECON 330 Labor Economics

3c-0l-3cr

Prerequisites: ECON 121, 122

History, structure, and operation of trade unions and employer organizations; major federal labor legislation; collective bargaining theory; wage determination; current labor problems.

ECON 331 Industrial Organization

3c-0l-3cr

Prerequisite: ECON 122 or instructor permission

Social effectiveness of industries analyzed through measures of market structure, market conduct, and market performance.

ECON 334 Managerial Economics

3c-0l-3cr

Prerequisites: ECON 121, 122, MATH 121 or equivalent

Applications of economic theory using algebra, elementary statistics, and calculus to solve managerial optimization problems including problems of forecasting and risk.

ECON 335 Public Finance

3c-0l-3cr

Prerequisites: ECON 121, 122 or instructor permission

Taxation and expenditure theory at the federal level; federal budget and debt considerations; public sector impact on economy.

ECON 338 Poverty in Africa

3c-0l-3cr

Prerequisite: ECON 101 or 121 or 122

Examines African poverty as an economic as well as a social phenomenon. It investigates the many sided nature of poverty and the importance of going beyond generalizations about the poor, including the various causes of poverty in Africa. It stresses the powerful ill effects of a combination of sluggish past economic growth, widening income inequalities, and anti-poverty strategies implemented by many African nations.

ECON 339 Economic Development I 3c-0l-3cr Prerequisites: ECON 121, 122 or instructor permission Introduces the following concepts: theory of growth; theory of economic development of underdeveloped countries.	ECON 372 Economics of Wages and Employment 3c-0l-3cr Prerequisite: ECON 330 or instructor permission An analysis of wages and employment under various market structures. Also, analysis of the impact of labor market forces on wages, prices, and distributive shares.
ECON 343 Economic History of the United States 3c-0l-3cr Prerequisite: ECON 101 or 121 or 122 Applications of economic theory and models of economic development to the main patterns of US postrevolutionary growth; emphasizes the history of economic development as a laboratory for testing economic hypotheses.	ECON 421 Macroeconomic Analysis 3c-0l-3cr Prerequisites: ECON 121, 122 or instructor permission Emphasizes aggregate income levels and problems of unemployment, inflation, and growth. Covers consumption and investment theories and the role of fiscal and monetary policy.
ECON 345 International Trade 3c-0l-3cr Prerequisites: ECON 121, 122 or instructor permission A study of the microeconomic segment of international specialization and exchange, including theories of international trade and their application to commercial policies, historical survey and examination of current problems of international trade, and the institutional setting of international trade.	ECON 422 Microeconomic Analysis 3c-0l-3cr Prerequisites: ECON 121, 122, MATH 121 or equivalent Consumer behavior, theory of the firm, theory of exchange, market structures, distribution, general equilibrium theory, welfare economics.
ECON 346 International Finance 3c-0l-3cr Prerequisites: ECON 121, 122 or instructor permission A study of the macroeconomic segment of international specialization and exchange, including analysis of balance of payments, exchange rates, and the mechanism of international economic and monetary adjustments; international macroeconomic policy; historical survey and examination of current international financial problems; and the institutional setting of international payments.	ECON 456 Advanced Econometrics 3c-0l-3cr Prerequisite: ECON 356 or equivalent or instructor permission Provides a more thorough understanding of the theory and practice of econometrics introduced in ECON 356. Students increase their proficiency in econometric analysis and improve their research skills by extending their research agendas begun in ECON 356 and through exposure to the scholarly literature. Students learn about a variety of topics related to regression analysis, including violations of the Classical assumptions, extensions of the basic regression model, and advanced techniques.
ECON 356 Introduction to Econometrics 3c-0l-3cr Prerequisite: ECON 355 or its equivalent or instructor permission An introduction to econometrics, including linear normal regression models of two or more random variables, special econometric problems, and solutions of simultaneous equations.	ECON 462 Energy Economics 3c-0l-3cr Prerequisites: ECON 122 or equivalent and MATH 115 or 121 or equivalent Focuses on a variety of energy-related topics from an economics perspective. Topics include energy demand and supply, market structure and energy pricing, renewable and nonrenewable sources of energy, environmental impacts of energy use, climate change, and energy policy.
ECON 360 Health Economics 3c-0l-3cr Prerequisite: ECON 122 Analyzes the market for healthcare: demand by individual consumers and supply by health workers and hospitals. Considers the problems of information, risk, and externalities in making health decisions and the role of insurance. Explores public health policies, both in a world and domestic context. Introduces economic methods for program/policy research: elasticity estimation, cost-benefit analysis, and supply-demand modeling.	ECON 480 Seminar 3c-0l-3cr Prerequisite: Instructor permission A seminar in selected economic issues or problems.
ECON 361 Environmental Economics 3c-0l-3cr Prerequisite: ECON 101 or 122 An examination of economic costs and benefits of environmental control and modification. Techniques of economic analysis are used to understand economic aspects of environmental problems and contribute toward their solution.	ECON 481 Special Topics var-1-3cr Prerequisite: Instructor permission Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.
ECON 362 Global Poverty and Health 3c-0l-3cr Prerequisite: ECON 122 Researches information related to global trends in health and poverty and examines theories related to the economic, social, and political forces behind these trends. Economically analyzes the barriers preventing greater access to and usage of health services in poor communities, such as asymmetric information, monopoly provision, and externalities. Critically examines health service provision from opposite economic spectrums: (1) as Global Public Goods and (2) as micro-programs targeting specific populations. Covers case studies of health initiatives in developing countries and their economic impacts.	ECON 483 Honors Thesis var-1-6cr Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.
ECON 365 Economics of Tourism 3c-0l-3cr Prerequisite: ECON 101 or 121 or 122; or instructor permission Examines the importance of tourism and the travel industry. Examines economic applications to tourism and each of the segments of the travel industry, including transportation, accommodations, food, and attractions and entertainment from both a domestic and international perspective.	ECON 493 Internship in Economics var-2-12cr Prerequisites: Economics major who has completed at least 12cr in economics and has at least a 2.5 GPA in the major and in all course work Provides on-the-job experience in economics positions with private and governmental employers. The student is also required to complete related academic work in the form of papers and selected readings. Number of credits earned depends on the nature of the job and amount of time involved in internship. A maximum of 6cr earned in this course may be counted toward the 30cr in economics requirement for economics majors.
ECSP: Early Childhood/Special Education College of Education and Communications	
ECSP 112 Growth and Development: Typical and Atypical 3c-0l-3cr Prerequisites: EDEX 110, PSYC 101 Presents the foundations, theories, and research findings on human growth from conception, including basic embryogenesis, up to early adolescence.	

Examines various aspects of child development with an emphasis on biological, cultural, educational, and parental influences that shape children, as well as selective examples of typical and atypical cognitive, physical, and social-emotional development.

ECSP 314 Creative Experiences and Play for All PreK to Grade 4 Learners 3c-0l-3cr

Prerequisite: Early childhood education/special education major or early childhood education major

Provides teacher candidates with the knowledge and skills necessary to incorporate creative music, art, drama, movement, and play activities into a comprehensive early childhood inclusive curriculum. How integration of creative experiences and play will enhance and encourage the development of all preK to grade 4 learners is emphasized, as is the historical, theoretical, and research base for the integration of play and creative experiences into a fully inclusive classroom.

ECSP 340 Introduction to Classroom and Behavior Management 3c-0l-3cr

Prerequisite: Early childhood education/special education major
An overview of classroom organization and management, along with systematic behavior change techniques required for effective teaching and enhanced student learning for all children in preK through grade 4 and students identified with special needs or at-risk through grade 8. The research-based classroom management and behavioral techniques can be used to create a positive learning environment for all students in an inclusive setting.

ECSP 440 Professional Seminar: Teacher as Researcher and Advocate for All PreK to Grade 4 Learners 2c-0l-2cr

Prerequisites: Early childhood education/special education major, successful completion of Teacher Education Step 1, admission to Teacher Education Step 2, concurrent enrollment in EDUC 461, 471

Provides support in a teacher candidate's ongoing professional development. Emphasizes guidelines for professional etiquette, ethical behavior, professional practice, and effective interpersonal relations with teachers, paraprofessionals, school and agency personnel, parents, and students. Facilitates work in engaging in informed advocacy efforts on behalf of children and the profession and examining the theoretical and research base for classroom practices.

**EDEX: Education of Exceptional Persons
Department of Communication Disorders, Special
Education, and Disability Services
College of Education and Communications**

EDEX 103 Special Education Technology 3c-0l-3cr

Addresses the use of assistive technology in the classroom in areas of communication, mobility, education, recreation, vocation, independence, and therapy/rehabilitation. The emphasis is on developing awareness of the diversity of assistive technology currently available for individuals with disabilities. Specific applications of assistive technology devices, which improve and maintain the functioning capabilities of individuals with disabilities, are presented. Students engage in independent learning activities and receive information that enables them to gather information about assistive technology devices, companies, and related services.

EDEX 110 Introduction to Special Needs PreK to Grade 8 3c-0l-3cr

Prerequisite: Early childhood education/special education majors only
Surveys characteristics, needs, problems, and behavior patterns of any child who deviates sufficiently from typical to be considered disabled or at risk for disability. Consideration to children who fall intellectually both above and below average and those who are disabled visually, acoustically, behaviorally, orthopedically, neurologically, or in respect to speech patterns. Focuses on children from birth to adolescence.

EDEX 111 Introduction to Exceptional Persons 3c-0l-3cr

Prerequisite: Department majors, dual majors, minors, and official incoming transfers only
Surveys characteristics, needs, problems, and behavior patterns of individuals who have disabilities or who are gifted. Students develop an understand-

ing and knowledge of individuals with sensory, behavioral, physical, cognitive, language, and learning disabilities. Acquaints students with history and legislative bases of special education.

EDEX 114 Atypical Development in Infants, Children, and Adolescents 3c-0l-3cr

Prerequisites: PSYC 101, EDEX 111

Presents foundations of human growth from conception to age 21. Atypical development related to special needs is emphasized with regard to cognitive, physical, and social-emotional development. A foundation for the understanding of the needs of students with developmental disabilities ranging from early intervention to the end of their high school years.

EDEX 222 Methods of Teaching Language Arts to Secondary Students with Disabilities 2c-0l-2cr

Prerequisites: EDEX 111, 3.0 GPA, secondary education major
Provides intensive methods for secondary learners with disabilities in literacy (reading, writing, and listening). Focuses on basic concepts of remedial literacy instruction and specially designed instruction for secondary-aged students with diverse needs. Reviews research in the field, including current issues, trends, practices, and services. Organized around critical areas of literacy instruction and study skills. Examines issues and practices related to students who are English language learners. A variety of instructional approaches (e.g., cooperative learning, simulations, role-playing) are used to facilitate the acquisition of new skills.

EDEX 223 Reading Methods and Strategies for Students with Disabilities 3c-0l-3cr

Prerequisites: EDEX 103, 111, 113

Focuses on basic concepts of developmental reading instruction and specially designed instruction for students with diverse needs. Reviews research in the field, examines necessary assessment tools, and surveys current issues, trends, practices, and services. Examines issues and practices related to students who are English language learners. Facilitates the acquisition of new skills through a variety of instructional approaches (e.g., cooperative learning, simulations, role-playing).

EDEX 231 Methods of Teaching Content Area Subjects to Persons with Disabilities 3c-0l-3cr

Prerequisite: EDEX 111

Presents various ways of assessing student knowledge and identifying and implementing evidence-based practices to increase the success of students with disabilities in social studies and science in K-12. Examines best practices for understanding and evaluating curricular demands, monitoring student progress, providing tiered supports, and appropriate accommodations for promoting and enhancing content-area learning.

EDEX 269 Identifying and Understanding Children with Academic and Social Learning Needs from Preschool through Adolescence 3c-0l-3cr

Prerequisites: EDEX 110, early childhood education/special education majors only

Focuses on evidence-based practices for educating children with special needs for academic instruction and/or social and emotional learning. Reviews literature on characteristics of students with learning and behavior problems and summarizes research on academic interventions, classroom climate, social and emotional learning, and self-regulation strategies. Applies social and behavioral learning theories to management of academic and social instruction. A variety of instructional approaches (e.g., case studies, simulations) are used to facilitate acquisition of new knowledge and to apply the knowledge to educational settings.

EDEX 278 Identifying and Understanding Children with Significant Adaptive Behavior and Learning Needs from Birth through Adolescence 3c-0l-3cr

Prerequisites: EDEX 110, early childhood education/special education majors only

Focuses on major theoretical principles and basic knowledge regarding the nature and characteristics of children with significant adaptive behavior and learning needs. Presents practical information and explores the positive potential of children with significant needs. Introduces the legal foundation

and federal regulations of IDEA that guide the assessment and instructional planning to include the Individual Family Service Plan (IFSP) and the Individualized Education Program (IEP). Examines information that is critical and generic to instruction in all domains and content areas.

EDEX 300 Education of Students with Disabilities in Inclusive Elementary Classrooms 2c-0l-2cr

Prerequisites: Early childhood education/preK-grade 6 and elementary education majors only; to be taken only during the semester of the designated methods courses

Examines the issues associated with education of students with diverse learning needs, particularly those with disabilities or who are at risk for school failure. Emphasizes special education, particularly the legal rights of students with exceptionalities and their parents and the responsibilities of educators in addressing those rights. Examines the differential impact of student characteristics on elementary-level school performance and instructional methods proven to be effective in educating students with disabilities and learning style differences.

EDEX 301 Education of Students with Disabilities in Inclusive Secondary Settings 2c-0l-2cr

Prerequisite: Secondary education majors and others who will be certified to teach content from K-12

Recommendation: Strongly recommended that this course be taken in the same semester as the designated methods course.

Examines the issues associated with education of students with diverse learning needs, particularly those with disabilities or who are at risk for school failure. Emphasizes special education, particularly the legal rights of students with exceptionalities and their parents, and the responsibilities of educators in addressing those rights. Examines the differential impact of student characteristics on secondary-level school performance and instructional methods proven to be effective in educating students with disabilities and learning style differences.

EDEX 321 Methods of Teaching Language Arts to Persons with Disabilities 3c-0l-3cr

Prerequisites: EDEX 111, 222, SPLP 254, 3.0 GPA

A review of typical and atypical characteristics of learners with disabilities in relationship to the language arts. Examines issues related to the preparation and execution of units of instruction in language arts for persons with mental and/or physical disabilities as well as issues and practices related to students who are English language learners. Stresses the use of diagnostic and prescriptive approaches to the integration of language arts across the curriculum with an emphasis on reading.

EDEX 323 Instruction of English Language Learners with Special Needs 2c-0l-2cr

Prerequisites: Admission to teacher certification

Provides future teachers with the necessary methods to meet the needs of English language learners with special needs in the classroom. Based on knowledge of the behaviors, beliefs, and attitudes of a multicultural approach to learning, instructional methods, appropriate assessment and language acquisition techniques, and use of varied resources are included.

EDEX 340 Introduction to Behavior Management in Special Education 3c-0l-3cr

Prerequisites: EDEX 111, 112, PSYC 101

An overview of systematic behavioral change techniques for use with students in a variety of special education settings, including integrated, resource, self-contained, special school, and residential. Emphasizes a case analysis approach to creating and evaluating behavioral changes for students with mild to severe disabilities.

EDEX 415 Preschool Education for Children with Disabilities 3c-0l-3cr

Prerequisites: Disability services majors, special education minors, 2.75 GPA

Information on assessment, intervention strategies, curriculum, and prescriptive planning for preschool children with disabilities. For departmental majors who are specifically interested in early childhood special education,

as an elective for other interested students in related fields, and as a required course for disability services majors.

EDEX 424 Strategic Assessment and Instruction in Expository Texts 3c-0l-3cr

Prerequisites: Early childhood education/special education majors, completion of Step 1 of the 3-Step Process

Focuses on methodologies used for assessing, designing, and implementing instruction in expository texts for students with reading and learning disabilities. Addresses the demands of educational environments in which teachers are expected to collaborate in providing direct services to students. Special consideration is given to the growth and development of collaborative practices. In addition, students are expected to collaborate with each other in planning, designing, adapting, and evaluating assessment and instructional activities for a range of content area expository texts.

EDEX 425 Methods and Curriculum (Mild-Moderate Disabilities) 3c-0l-3cr

Prerequisites: EDEX 221, 222, 231, 321, 340, successful completion of Step 1 of the 3-Step Process

An in-depth examination of assessment methods, strategies, and curricula. Emphasizes assessment methods and strategies used in a variety of service models that serve elementary- and secondary-level students with learning disabilities, behavioral disorders, mild mental retardation, and high-function autism.

EDEX 435 Methods and Curriculum—Severe Cognitive Disabilities 3c-0l-3cr

Prerequisites: Successful completion of Step 1 of the 3-Step Process, early childhood education/special education, PreK-8/7-12 special education and reading specialist, secondary content/grades 7-12 special education certification majors or permission

Emphasizes methods designed to facilitate the development of an integrated, functional, and community-based curriculum that prepares individuals for integration in a wide variety of postschool environments. Particular attention is given to methods and interventions based on the principles of applied behavior analysis.

EDEX 440 Ethical and Professional Behavior 1c-0l-1cr

Emphasizes ethical and professional behavior for educational professionals working with individuals with special needs. Focuses on responsible and ethical conduct as it relates to interaction with students and other professionals in direct service, instructional, and/or supervisory roles. Also addresses legal implications related to these roles.

EDEX 458 Transition Assessment and Planning for Youth with Disabilities 3c-0l-3cr

Develops competencies in the skills necessary to help students with disabilities make a successful transition from school to adult life. Transition service elements are, at a minimum, postsecondary education and training, employment, and community living. For students with disabilities, successful outcomes require self-determination and other personal-social characteristics that must be identified and supported by the transition team throughout the entire transition planning process.

EDEX 460 Family Perspectives on Disability 3c-0l-3cr

Prerequisite: PSYC 101

For any major who will work with families and youth with disabilities. By understanding families as competent and resourceful systems, students critically examine ways to collaborate effectively with family members. Focuses on legal and philosophical bases for supporting families in making important decisions affecting the education and care of their children.

EDEX 469 Education of Persons with Emotional/Behavioral Disorders, Learning Disabilities or Brain Injury 3c-0l-3cr

Prerequisites: Successful completion of Step 1 of the 3-Step Process and a dual major in disability services/sociology or a minor in special education Focuses on major theoretical positions regarding etiology of emotional/behavioral disorders, learning disabilities, and brain injury; definition and identification of the populations; and educational approaches. Reviews

research in the field, including current issues, trends, educational practices, and services. A variety of instructional approaches (e.g., cooperative learning, simulations, role playing) are used to facilitate acquisition of new knowledge and skills. Students are expected to develop presentations using Internet resources and electronic format.

EDEX 478 Education of Persons with Mental Retardation/Developmental Disabilities and Physical/Multiple Disabilities **3c-0l-3cr**

Prerequisites: Successful completion of Step 1 of the 3-Step Process and a dual major in disability services/sociology or a minor in special education. Focuses on major theoretical positions regarding etiology of mental retardation, developmental disabilities, a wide and diverse range of physical/multiple disabilities, and other health impairments. Discusses definitions, population characteristics, and educational approaches. Reviews research in the field, including current issues, trends, practices, and services.

EDEX 480 Seminar in Special Education **var-1-3cr**

Prerequisite: Departmental permission

The pursuit of knowledge regarding specific concerns of the exceptional that are not ordinarily considered in such detail during regular classroom instruction. Students are expected to submit a written proposal regarding their desire for study at the time permission for enrollment is sought. With permission, the course may be repeated for credit.

EDEX 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

**EDHL: Education of Deaf and Hard-of-Hearing Persons
Department of Communication Disorders, Special
Education, and Disability Services
College of Education and Communications**

EDHL 114 Introduction to Deaf and Hard-of-Hearing Persons **3c-0l-3cr**

Deals with the different approaches used in teaching students who are deaf or hard of hearing—manual language, oral language, and total communication. The historical background of each approach is presented with its strengths and weaknesses. Criteria for the use of each approach are established in consideration of degree of loss exhibited by the pupil, the age of onset, and the social and psychological implications.

EDHL 115 Introduction to American Sign Language **3c-0l-3cr**

Prerequisite: Deaf education or disability services major or Deaf studies minor or permission

Development of manual dexterity and fluency using fingerspelling. Acquisition of basic American Sign Language syntax, semantics, vocabulary, and pragmatics. Practice in acquiring general information from a signed message and conversing informally on commonly used topics. Exploration of the history of ASL and cultural aspects within the deaf community.

EDHL 215 Intermediate American Sign Language **3c-0l-3cr**

Prerequisites: EDHL 115, 3.0 GPA required for deaf education majors, 2.8 GPA for Deaf studies minors

Emphasizes vocabulary expansion, comprehension of signed information, and development of fluency in conveying a message in American Sign Language. Focuses on idiom-like expressions, number systems, rules, grammar, and conversational language. Total immersion approach is used.

EDHL 307 Speech for Deaf and Hard-of-Hearing Persons **3c-0l-3cr**

Prerequisites: EDHL 114, 3.0 GPA

Techniques for developing, diagnosing, analyzing, and correcting the speech and voice problems of persons who are deaf or hard of hearing. Includes lecture, demonstration, and special projects.

EDHL 308 Language for Deaf and Hard-of-Hearing and English Language Learners **3c-0l-3cr**

Prerequisites: EDHL 114, admission to Step 1 of the 3-Step Process

Reviews normal language development for birth through 12 years and compares it to the language development of children with various types and degrees of hearing loss. Emphasizes specific strategies focused on the assessment and development of English language skills in English language learners (ELL) and deaf and hard-of-hearing children (D/HH).

EDHL 317 Sign Language in Educational Settings **3c-0l-3cr**

Prerequisites: EDHL 215, deaf education major or permission

Focuses on the use of sign language in the schools. Includes the adaptation of American Sign Language to Manually Coded English and Signed English, basic principles of interpreting in an educational setting for future teachers of deaf and hard-of-hearing students, and pedagogical methods of including American Sign Language as a language of instruction for deaf students.

EDHL 329 Teaching Collaborative Practicum I **1c-1l-1cr**

Prerequisites: EDHL 114, 115, 215, 308, 360, 361; EDUC 242, admission to Step 1 of the 3-Step Process

An opportunity to work in either a one-to-one or small group instructional setting with K-12 students who are deaf or hard of hearing. Emphasizes lesson planning, academic instruction, curriculum-based assessment, progress monitoring, collaboration, professional report writing, and reflection.

EDHL 330 Teaching Collaborative Practicum II **2c-1l-2cr**

Prerequisites: EDHL 114, 115, 215, 308, 360, 361; EDUC 242; admission to Step 1 of the 3-Step Process

An opportunity to work with either a one-to-one or small group instructional setting with K-12 students who are deaf or hard of hearing. Lesson planning, academic instruction, response to instruction, curriculum-based assessment, progress monitoring, collaboration, peer monitoring, professional report writing, and reflection are emphasized.

EDHL 360 General Methodology for Education of Deaf and Hard-of-Hearing Persons I **3c-0l-3cr**

Prerequisites: EDHL 114, 115; admission to Step 1 of the 3-Step Process. Provides systematic coverage of the basic procedures for maintaining legal educational mandates (IDEA) and teaching curriculum subjects. Includes the development of an Evaluation Report and Individualized Education Plan, including a communication plan, and regular and adaptive methods of instruction for the teaching of language arts, social studies, and science. The Pennsylvania K-12 Academic Standards are used to guide the construction of lessons that are developmentally appropriate and follow current best practices in education. Multiple projects and teaching activities are involved.

EDHL 415 ASL Pedagogy **1c-1l-1cr**

Prerequisites: EDHL 114, 115, 215, 315, 316, 3.0 GPA

Studies the evolution of signs; dialectical sign systems. Analysis and comparison of the linguistic similarities/differences of various sign languages. Direct translation of written or spoken information on specific topics using American Sign Language or Signed English. Practice using conversation on both a social and academic level.

EDHL 417 Advanced American Sign Language **3c-0l-3cr**

Prerequisite: EDHL 215

A continuation of Intermediate American Sign Language (ASL). Focuses on vocabulary expansion, comprehension of signed information, and development of fluency in conveying a message in ASL. Emphasizes receptive ability as well as overall quality of expression. Additional cultural aspects of ASL are discussed.

EDHL 440 Professional Seminar: Preparing to Be a Teacher, Researcher, Diagnostician, and Student Advocate **2c-0l-2cr**

Prerequisites: Deaf education major, successful completion of Step 2 of the 3-Step Process, concurrent enrollment in student teaching EDUC 421, 441. Students learn the importance of engaging in continual professional development. The Code of Professional Practice and Conduct for Educators is

emphasized. Collaboration and correspondence with school and agency personnel, parents, and students are explored. While examining the theoretical and research-based practices for an educational setting, the students engage in informed advocacy efforts on behalf of children with normal hearing, those with hearing loss, and the profession.

EDHL 451 Reading for Deaf, Hard-of-Hearing, and English Language Learners **3c-0l-3cr**

Prerequisites: EDHL 308; admission to Step 1 of the 3-Step Process
Presents concepts of reading instruction and systematic coverage of the methods of teaching reading to all students. Discussion about and adaptation for students who are deaf or hard of hearing and English language learners from readiness stages through upper school content reading are emphasized. (writing-intensive course)

EDHL 465 Parent/Preschool Programs for Deaf and Hard-of-Hearing Children **3c-0l-3cr**

Prerequisites: EDHL 114, 308; admission to Step 1 of the 3-Step Process
Developing home/preschool programs for parents and infants who are deaf or hard of hearing (0-3 years). Teaching speech, language, speechreading, use of residual hearing, and developing readiness skills at the preschool level. An additional emphasis on early childhood aesthetics and adaptations for English language learners at the preschool level is also included.

EDHL 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content
Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

EDSP: Educational and School Psychology
Department of Educational and School Psychology
College of Education and Communications

EDSP 102 Educational Psychology **3c-0l-3cr**

Promotes an understanding of the principles of psychology governing human behavior, with particular emphasis on the relation to the learner, learning process, and learning situation in an educational environment.

EDSP 257 Understanding and Taking Standardized Tests **1c-0l-1cr**

For teacher education majors to promote their understanding of the principles of successfully mastering standardized tests such as the Praxis I exam. A particular emphasis on practicing the skills necessary for understanding the assessments. Highlights the application of skill-based decision making in preparing for test taking. Also discusses implications of individual differences and variables that affect performance on standardized tests.

EDSP 373 Psychology of Adolescent Education **3c-0l-3cr**

Prerequisite: EDSP 102
A study of significant characteristics, behavior, and educational and social problems of adolescents.

EDSP 378 Learning **3c-0l-3cr**

Prerequisite: EDSP 102
Explores learning theories and educational application in the classroom.

EDSP 468 Current Topics in Educational Psychology **3c-0l-3cr**

Prerequisite: EDSP 102
Enables students to participate in advanced study of current topics at the interface between issues in education and the theories that drive the field. Investigates topics as they apply to specific aspects of teaching and learning. Investigates current academic considerations with a variety of perspectives being integrated to prepare students for addressing the needs of students.

EDSP 476 Foundations of Behavior Analysis **3c-0l-3cr**

Prerequisite: EDSP 102 or instructor permission
Introduces behavior analysis through discussion of its philosophical assumptions, theoretical underpinnings, and basic concepts. (Offered as EDSP 376 before 2017-18.)

EDSP 477 Assessment of Student Learning: Design and Interpretation of Educational Measures **3c-0l-3cr**

Prerequisites: PSYC 101 or permission; admission to teacher certification
Acquaints students with major methods and techniques of evaluation used to assess and report growth, development, and academic achievement of learners in elementary and secondary schools, including interpretation of standardized test information.

EDSP 479 Interpreting and Critiquing Educational Research **3c-0l-3cr**

Prerequisite: EDSP 477 or instructor permission
Obtain knowledge and understanding of various designs, components, and principles used in educational research articles and develop application, analysis, synthesis, and evaluation skills which will allow the summarizing and critiquing of a variety of research articles.

EDSP 493 Educational Psychology Honors Internship **1cr**

Prerequisites: EDSP 102 and admission to Honors Track
A direct experience in one of three centers located in the Educational and School Psychology Department; centers include the Child Study Center and the Center for Rural Gifted Education. Other centers located within the College of Education and Communications or the Teacher Education Program may be considered if approved by the Honors Track director. May be repeated.

EDUC: Education
College of Education and Communications

EDUC 221 Seminar in Essential Skills in Peer Mentoring **1c-0l-1cr**

Focuses on the critical peer mentoring skills including leadership, professionalism, and interpersonal communication. Instructs students in comprehensive preparation for working one-on-one with mentees, while maintaining confidentiality and respecting appropriate boundaries in the relationship. Demonstrates mentoring skills and proper accountability in supervised field experiences.

EDUC 242 Pre-student Teaching Clinical Experience I **var-1cr**

Prerequisite: Admission to teacher certification
Introduces specific competencies that relate to individual major fields of teaching and university-based instruction, as well as observation/participation in a preK-grade 12 field experience. These competencies incorporate strategies and techniques for addressing the needs of all students, including those with special and English language learning needs.

EDUC 250 Labyrinth Seminar **1c-0l-1cr**

Focuses on the communication, executive functioning, and inter/intrapersonal demands of college life. Designed to build the necessary skills to navigate the social and academic environment to succeed in the college experience. The seminar includes both teacher- and student-directed topics. This course can be repeated every semester that the student elects to participate in the Labyrinth Center.

EDUC 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content
Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

EDUC 342 Pre-student Teaching Clinical Experience II **var-1cr**

Prerequisites: EDUC 242, admission to junior standing
Continues to develop and refine competencies that relate to individual major fields of teaching through university-based instruction as well as participation and teaching in a preK-grade 12 school field experience. Also incorporates strategies and techniques for the delivery of instruction to all students, including those with special and English language learning needs. May be repeated for students seeking dual certification.

EDUC 408 Reading in the Content Areas**3c-01-3cr****Prerequisite:** ELED 222

Problems related to teaching students reading and study skills specifically needed in each of the subject areas at the elementary level. Content teachers learn how to develop students' competence in these skills as part of their regular classroom instruction.

EDUC 421 Student Teaching**var-5-6cr****Prerequisite:** Admission to student teaching

An experience in teaching at the elementary level; coordination and visitation by a university faculty member with daily supervision by a cooperating classroom teacher.

EDUC 423 Professional Practicum, Including School Law**var-3cr**

A series of conferences and related activities to prepare students for actual teaching experiences. Parallels student teaching experience in junior and senior years. (elementary education majors only)

EDUC 440 Professional Seminar: Teacher as Leader and Researcher Grades 4-8**2c-01-2cr****Prerequisites:** Middle-level education 4-8 major, concurrent enrollment in student teaching EDUC 421 and 441

Provides support in a teacher candidate's ongoing professional development. Emphasizes guidelines for professional etiquette, ethical behavior, professional practice, and effective interpersonal relations with teachers, paraprofessionals, school and agency personnel, parents, and students in grades 4-8. Examines the theoretical and research basis for classroom practices.

EDUC 441 Student Teaching**var-5-12cr****Prerequisite:** Admission to student teaching, successful completion of Step 2 of Teacher Education 3-Step Process

An experience in teaching at the elementary or secondary level; coordination and visitation by a university faculty member with daily supervision by a cooperating classroom teacher.

EDUC 442 School Law**1c-01-1cr**

Required of all teacher certification students. Includes an overview of legal principles that apply to special areas of education. Must be taken before student teaching.

EDUC 451 Teaching Science in the Secondary School**2c-2l-3cr****Prerequisite:** Admission to student teaching

Provides the background to help science majors meet the problems of teaching science. Various inquiry approaches useful in meeting the objectives of a contemporary science class, including special needs students and English-language learners, are taught and exemplified.

EDUC 452 Teaching of English and Communication in the Secondary School**3c-01-3cr****Prerequisites:** ENGL 314, 323, 324 and admission to Step 1 of the 3-Step Process

A prerequisite to student teaching in English. Introduces current professional practices in the teaching of English and communications in secondary school.

EDUC 453 Teaching of Foreign Languages in the Secondary School**3c-01-3cr****Prerequisites:** Grade of "C" or better in SPAN 390 or FRNC/GRMN 390; instructor permission

Helps students develop an understanding of current theories of foreign language learning through exploration of relevant research. Students read about and discuss the implications of key research for teaching in secondary school classrooms. Opportunities are provided to use the theoretical base to design and present classroom lessons and to reflect on the effectiveness of their teaching. Special attention is given to designing performance-based language assessments and to adapting instruction to address the special needs of learners. Taught fall semester only.

EDUC 455 Teaching of Social Studies in Secondary Schools**3c-01-3cr****Prerequisite:** Admission to Teacher Education Program

A study of modern methods and techniques for teaching social studies and of current curricula in social studies.

EDUC 456 Teaching Mathematics in the Secondary Schools**3c-01-3cr****Prerequisites:** Admission to Teacher Education Program, a declared major in mathematics education, and EDUC 242 with a grade of "C" or better

A study of curricula, standards, methods, and techniques for teaching mathematics in the secondary schools.

EDUC 461 Student Teaching**6c-01-6cr****Prerequisite:** Admission to student teaching, successful completion of Teacher Education Step 2

An experience in teaching students with special needs at the preK to grade 8 level; coordination and visitation by a university faculty member with daily supervision by a cooperating teacher.

EDUC 471 Student Teaching**6c-01-6cr****Prerequisite:** Admission to student teaching, successful completion of Teacher Education Step 2

An experience in teaching students with special needs at the preK to grade 8 level; coordination and visitation by a university faculty member with daily supervision by a cooperating teacher.

EDUC 481 Special Topics**3c-01-3cr****Prerequisite:** By permission only

An opportunity to investigate in depth an area of education under professional supervision.

EDUC 482 Independent Study**var-1-3cr****Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Provost's Office

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

EDUC 499 Multicultural/Multiethnic Education**2c-01-2cr****Prerequisite:** One methods course must be taken before, or concurrently with, EDUC 499

Provides an understanding and appreciation of cultural diversity in the United States. Students gain the ability to locate and develop curricular materials appropriate to this country's diversity.

ELR: Employment and Labor Relations

Department of Employment and Labor Relations
College of Health and Human Services

ELR 314 Health Policy and Law**3c-01-3cr**

Focuses on understanding the evolution of healthcare policy, health law, and federal and state regulation of healthcare financing programs. Introduces healthcare policy making; critical health policy issues; legislative, regulatory, and legal challenges; and legislative and political processes that impact the healthcare delivery system in the United States. (Cross-listed as NURS 314.)

ELR 480 Introduction to Negotiations and Conflict Resolution**3c-01-3cr**

Deals with negotiations and conflict resolution techniques. An introduction to current concepts and theories of negotiations and resolving conflict and their application generally to everyday issues. Prepares students to engage in these techniques in workplace issues such as collective bargaining, negotiating contracts and agreements internally as well as externally.

ENGL: English
Department of English
College of Humanities and Social Sciences

ENGL 100 Basic Writing 3c-0l-3cr

The student develops the basic English skills necessary for clear and effective communication. Restricted to freshmen whose placement testing essay or portfolio score is a four or under. Does not meet General Education English or Liberal Studies writing requirements.

ENGL 101 Composition I 3c-0l-3cr

Prerequisite: ENGL 100 where required by placement testing

A first-year writing course. Students use a variety of resources to create projects in a variety of writing genres. Resources for writing include but are not limited to memory, observation, critical reading and viewing, analysis, and reflection. Students use writing processes to draft, peer review, revise, and edit their projects.

ENGL 121 Humanities Literature 3c-0l-3cr

Prerequisite: ENGL 101

Introduces students to works of imaginative literature through a careful analysis of poetry, drama, and prose fiction (short story and/or novel) from a variety of periods and cultures, including texts by women and ethnic and racial minorities. Also offered as FNLG 121. ENGL/FNLG 121 may be used interchangeably for D/F repeats; may not be counted for duplicate credit.

ENGL 122 Introduction to English Studies 3c-0l-3cr

Prerequisites: English major/minor; minimum grade of "C" in ENGL 101

Introduces students to English studies by acquainting them with the critical approaches appropriate to the varied subject areas of the discipline. The assumptions and methods of these approaches are considered, especially in the interpretation of literature. At the conclusion, students are able to critically analyze texts and demonstrate those skills in discussion and writing. Required of all English majors.

ENGL 202 Composition II 3c-0l-3cr

Prerequisites: ENGL 101 and sophomore standing

Serves as a bridge between Composition I and students' professional writing. Develops rhetorical skills for informed inquiry. Also develops the following abilities: writing, critical reading, revising, citing and documenting, speaking and listening, and reflecting.

ENGL 203 Introduction to Language Studies 3c-0l-3cr

Prerequisite: ENGL 101

Introduces the study of linguistics and rhetoric. Considers cultural contexts and issues of power, focusing on questions such as how our brains use language, how language represents the world we live in, and how language influences our actions.

ENGL 208 Introduction to Film Studies 3c-0l-3cr

Concentrates on the film as an artistic medium. Eight to 12 motion pictures are shown during semester and are analyzed in class discussions.

ENGL 210 British Literature to 1660 3c-0l-3cr

Prerequisites: ENGL 101, and 121 or 122

Surveys British literature from its beginnings to about 1660, acquainting students with the experience of reading many of the primary materials (whole works whenever possible or full, free-standing parts) and provides background information concerning the development and flowering of the various genres, the dominant ideas of each period, and the social and cultural context of the separate works.

ENGL 211 British Literature to 1660-1900 3c-0l-3cr

Prerequisites: ENGL 101, and 121 or 122

Surveys British literature from about 1660 to the beginning of the 20th century, acquainting students with the experience of reading many of the primary materials (whole works whenever possible or full, freestanding parts) and providing them with background information concerning the development and flowering of the various genres, the dominant ideas of each period, and the social and cultural context of the separate works.

ENGL 212 American Literature: Beginnings to 1900 3c-0l-3cr

Prerequisites: ENGL 101, and 121 or 122

Provides an understanding of American literature from its beginning to about 1900. Concentrates primarily on a relatively small number of major works, each of which helps to illustrate the "spirit of the age" it represents.

ENGL 213 British and American Literature Since 1900 3c-0l-3cr

Prerequisites: ENGL 101, and 121 or 122

A survey of major authors and works in British and American literature since 1900. Begins with the shift from Victorianism and late 19th-century literature into modernism, as exemplified by writers such as Woolf, Hemingway, and O'Neill, and continues with postmodernism and contemporary literature.

ENGL 220 Advanced Composition 3c-0l-3cr

Prerequisite: ENGL 202

Primarily seeks to improve writing style, particularly in the more utilitarian forms, such as magazine article and personal essay.

ENGL 221 Creative Writing 3c-0l-3cr

Prerequisite: ENGL 121 or 122 or FNLG 121

A seminar course in which students are expected to produce a substantial body of written work in one or more of the creative genres, the particular kind of writing chosen with regard to the special interests and abilities of each student.

ENGL 222 Technical Writing 3c-0l-3cr

Prerequisite: ENGL 101

Focuses on helping the student to acquire and to apply communication skills essential to the technical and professional writer.

ENGL 225 Introduction to Literature by Women 3c-0l-3cr

Prerequisites: ENGL 121 or 122 and 202

Major trends and motifs across genres (fiction, nonfiction, poetry, autobiography) that reflect themes and subjects of continuing interest to women writers. The intersection of genre with race, ethnicity, and social class is of particular significance.

ENGL 226 Survey of Global Literature Since 1900 3c-0l-3cr

Prerequisites: ENGL 101, and 121 or 122

Surveys 20th century and contemporary global literature in English and/or translation. Readings are organized around major contexts and themes of colonialism, revolution, decolonization, nationalism, and globalization.

ENGL 227 Introduction to Legal Writing 3c-0l-3cr

Prerequisite: ENGL 202

Introduces legal research and writing. Students learn to prepare research memos, memoranda of law, legal briefs, court observation essays, and other legal documents. Other topics include legal terminology, audience analysis, and case study analysis.

ENGL 265 Law and Literature 3c-0l-3cr

Prerequisites: Minimum grade of "C" in ENGL 101 and 202

Explores the historical and cultural connections between selected legal texts and themes as they relate to novels, poems, films, drama, essays, and other literary genres.

ENGL 281 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

ENGL 308 Critical Theory 3c-0l-3cr

Prerequisite: Minimum grade of "C" in ENGL 122

Explores the major writings, writers, issues, technical vocabulary, and critical methods in literary, textual, and cultural studies theory; acquaints students with how such theoretical methods affect the way literary and cultural texts are read, studied, and taught; and enables the students to recognize and engage in theoretical praxis of various kinds.

ENGL 309 Dramaturgy 3c-0l-3cr An introduction to the study and profession of dramaturgy. A study of the historical significance of the dramaturg through the reading of early and modern practitioners. An examination of a number of critical theories that students will use to contextualize play scripts under study. Performance of such dramaturgical tasks as identifying script references, historicizing social conventions and customs, comparing translations of notable foreign plays, preparing information packets for actors, directors, and design teams, drafting program notes, and organizing talkbacks. Opportunity to provide services for a department production. (Cross-listed as THTR 311.)	ENGL 328 Introduction to Linguistics 3c-0l-3cr An introduction to the study of languages as complex sets of interacting systems needed for human communication in a variety of interpersonal, academic, and professional contexts. Focuses on the fundamentals of sound systems, word structures, sentence structures, text structures, meaning systems, and language-related power systems. Also considers questions of how language develops over time, how languages are made up of a number of varieties, how languages are learned and used, how language use varies for different groups of users, and how these issues are related to cultural contexts including issues of power.
ENGL 310 Public Speaking 3c-0l-3cr Prerequisite: ENGL 101 Fundamental principles of public speaking, audience analysis, interest, and attention and selection and organization of speech material.	ENGL 329 The History of the English Language 1c-0l-1cr Prerequisite: ENGL 202 Studies historical development of the English language as a basis for a better understanding of modern American English.
ENGL 313 Rhetorical Trends and Traditions 3c-0l-3cr Prerequisite: ENGL 101 A survey of the major issues in and uses of rhetorical theory and criticism in contemporary culture, using rhetorical concepts from ancient through contemporary times. Rhetoric is the humanistic study of the ways people manipulate language and try to persuade others in the social world.	ENGL 330 The Structure of English 3c-0l-3cr Prerequisite: ENGL 202 An introduction to the fundamentals of language study with an equal emphasis on the sound, word, sentence, meaning, and discourse patterns of English. Educationally relevant topics, such as applications of linguistics to the teaching of English language and literature, varieties of grammar, and linguistic descriptions of styles and registers, are an integral part of the course. Course is a prerequisite for EDUC 452.
ENGL 314 Speech and Communication in the Secondary English Classroom 3c-0l-3cr Prerequisites: ENGL 122, 202 Offers practical and theoretical approaches to relationships between oral and written communication. Performance based (involving a variety of communication activities) and knowledge based (involving study of research on language arts relationships). Emphasizes integration of the four language arts for improving teachers' own communication skills as well as those of their students.	ENGL 332 Film Genres 3c-0l-3cr Prerequisites: ENGL 101, 208 Offers a close examination of classic and contemporary films and film theory from a variety of critical perspectives—for example, spectatorship, auteurism, feminism, historiography, and cultural studies—through a focus on genre.
ENGL 321 Persuasive Speech and Writing 3c-0l-3cr Prerequisite: ENGL 202 Focuses on the practice of persuasive discourse in speech, writing, and visual media. Includes projects and readings in debate, written argument, and rehearsed and extemporaneous speaking. Students investigate such subjects as rhetorical foundations and applications, language choice and stylistic variations, popular culture, literature, and communication dynamics.	ENGL 333 Psycholinguistics 3c-0l-3cr Prerequisite: ENGL 202 Concerns the interrelation between language system and behavior and various factors of human psychology. Surveys developments since the 1940s, including relationships between language and perception, biology, memory, meaning, and cognition, as well as oral and written behavior. Students of language and literature may improve their assumptions about how human beings use language.
ENGL 323 Teaching Literature and Reading in the Secondary School 3c-0l-3cr Prerequisites: ENGL 122, 202 Introduces the theory and research on teaching literature and reading in the secondary school. Reviews reader-response literary theory and classroom-based research on teaching literature. Also reviews socio-psycholinguistic reading theory and classroom-based research on teaching reading.	ENGL 335 Literary Nonfiction 3c-0l-3cr Prerequisite: ENGL 202 Focuses on the study of forms of literary nonfiction, in English, which may include traditional essays, lyric essays, memoir, and/or creative nonfiction depending on the instructor's expertise.
ENGL 324 Teaching and Evaluating Writing 3c-0l-3cr Prerequisites: ENGL 122, 202, English education major or permission A study of modern approaches to the teaching of writing, including current theories on the composing process, as well as instruction in evaluating, including holistic scoring. Includes practice in writing.	ENGL 336 Language, Gender, and Society 3c-0l-3cr Prerequisites: ENGL 202, junior standing Investigates the various ways that language and gender interact and intersect in society. Examines such questions as: Does society use language to favor one sex over the other? Why is language a crucial component in formulating constructs of masculinity and femininity? What stereotypes of gender-based language are promoted in our society? How can we analyze language to reveal disparate views and treatment of the sexes?
ENGL 325 Writing Poetry 3c-0l-3cr Prerequisite: ENGL 221 or instructor permission A writing workshop for students who wish to focus intensively on the writing and revision of poetry and on developing an audience for one's creative work.	ENGL 337 Myth 3c-0l-3cr Prerequisites: ENGL 202, and 121 or 122 Examines the nature and function of the mythic experience and explores the archetypal patterns of myths from various cultures.
ENGL 326 Writing Fiction 3c-0l-3cr Prerequisite: ENGL 221 or instructor permission A writing workshop for students who wish to focus intensively on the writing and revision of fiction and on developing an audience for one's creative work.	ENGL 340 The Novel 3c-0l-3cr Prerequisites: ENGL 101, and 121 or 122 Focuses on the forms and theories of the novel as a genre. Emphasizes major writers and movements as well as significant historical developments.
ENGL 327 Writing Creative Nonfiction 3c-0l-3cr Prerequisite: ENGL 221 or instructor permission A writing workshop for students who wish to focus intensively on the writing and revision of literary nonfiction forms and on developing an audience for one's creative work.	ENGL 341 Poetry 3c-0l-3cr Prerequisites: ENGL 101, and 121 or 122 Studies the forms and theories of poetry as a genre. Includes study of major writers, movements, and aesthetic developments.

ENGL 342 Short Fiction	3c-0l-3cr	ENGL 386 Regional Literature in English	3c-0l-3cr
Prerequisites: ENGL 101, and 121 or 122		Prerequisites: ENGL 202, and 121 or 122	
Studies the form and theory of short fiction as a genre. Emphasizes major writers and movements as well as significant historical developments.		Examines the contributions of a particular region to national literature. The focus might be any of the following: Appalachian writers, local color writers, New England writers, Southern writers, writers of the American West, or Canadian writers.	
ENGL 343 Drama	3c-0l-3cr	ENGL 387 Irish Literature	3c-0l-3cr
Prerequisites: ENGL 101, and 121 or 122		Prerequisite: ENGL 121 or 122	
Focuses on the forms and theories of drama as a genre. Emphasizes major writers and movements as well as significant historical developments.		Additional prerequisite for BA English majors: ENGL 213	
ENGL 344 Ethnic American Literature	3c-0l-3cr	An introduction to Irish literature since 1800, with particular emphasis on the Literary Revival in the early 20th century. Key authors include Yeats, Joyce, Synge, O'Casey, Edgeworth, Somerville and Ross, Gregory, Beckett, and Heaney. The development of Irish writing is examined within the contexts of Irish history, language, culture, and politics.	
Prerequisites: ENGL 101, and 121 or 122		ENGL 396 The Literature of Emerging Nations	3c-0l-3cr
Concerned with ethnic US experiences as expressed in poetry, fiction, drama, and autobiography. The topic will vary and be announced in advance. Examples include Asian American, Hispanic, Irish American, Jewish American, and Native American literatures.		Prerequisite: ENGL/FNLG 121 or ENGL 122, 202	
ENGL 347 Playwriting	3c-0l-3cr	A comparative study of a selection of literature written in major European languages but originating in the nations of the developing world. Works are mainly prose fiction (although essay, theater, and poetry may be included) and reflect a diversity of geographical, cultural, and prior colonial circumstances. Also listed as FNLG 396.	
Prerequisite: THTR 111 or instructor permission		ENGL 398 Global Genres	3c-0l-3cr
A practical exploration of the craft and process of playwriting. Focuses primarily on the practical, "hands-on" experiences approximating the "developmental process" currently in use in the American theater. The student is guided from the initial concept through synopsis, outlines, working drafts, and completion of an original one-act play and a "staged reading" of this project. Note: Cross-listed as THTR 347. Either of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.		Prerequisite: ENGL 202	
ENGL 348 African American Literature	3c-0l-3cr	Focuses on a specific literary genre (including, but not limited to, poetry, drama, film, the short story, or the novel) as it has been developed and transformed in global contexts beyond the typical domains of the British or American literary traditions. Situates the use of a genre within transnational literary and historical developments. The global genre studied in a particular semester to be announced in advance.	
Prerequisites: ENGL 121 or 122 and 202		ENGL 415 English Language Studies for Teachers	3c-0l-3cr
Primarily 19th- and 20th-century African American literature (poetry, fiction, nonfiction), including works by Frederick Douglass, W. E. B. Du Bois, spirituals and folk poetry, Harriet B. Wilson, Jean Toomer, Richard Wright, Audrey Lorde, and Toni Morrison. Emphasizes historical context and an Afrocentric approach.		Prerequisite: ENGL 202	
ENGL 349 English Bible as Literature	3c-0l-3cr	Focuses on the fundamentals of language study with equal emphasis on the sound, the word, the sentence, the meaning, and the discourse patterns of English as they manifest in daily lives. Educationally relevant topics, such as applications of sociolinguistics to the teaching of English language and literature, varieties of grammar, and linguistic descriptions of styles and registers are an integral part of the course.	
Prerequisites: ENGL 121 or 122 and 202		ENGL 418 Young Adult Literature	3c-0l-3cr
Considers literary aspects of the English Bible by relating earlier translations to the Authorized Version of 1611 and by tracing some of the major influences of the King James Bible upon writers and speakers of modern English. Offers a close reading of the major narrative and poetic portions of the Old Testament.		Prerequisites: ENGL 101, 122, 323, or permission, English education major	
ENGL 350 Gender and Sexual Orientation in Literature, Theory, and Film	3c-0l-3cr	Introduces literature for and about young adults. Emphasizes critical study of the literature and its classification as well as resources and rationales for using young adult literature in the middle and secondary classroom. Explores selection of literature and various methods of literature instruction. (Offered as ENGL 318 before 2014-15.)	
Prerequisite: ENGL 202		ENGL 420 Writers' Studio	3c-0l-3cr
Introduces literature, film, and theory that focus primarily on lesbian, gay, bisexual, and transgender perspectives. Inquires into the representation of gender and sexuality within historical and cultural contexts.		Prerequisite: ENGL 220 or 221	
ENGL 354 Classical Literature in Translation	3c-0l-3cr	An upper-division course emphasizing reading, discussion, and writing on specialized topics related to the study and performance of writing. The focus varies from semester to semester according to the expertise of the faculty member teaching the course.	
Prerequisites: ENGL 202, and 121 or 122		ENGL 421 Digital Writing	3c-0l-3cr
Masterpieces studied range from those of ancient Greece to Middle Ages. English literature and American literature excluded.		Prerequisite: ENGL 202	
ENGL 360 Editing and Publishing	3c-0l-3cr	Introduces composition and presentation issues in writing for digital media. Focuses on the conventions of digital writing and provides practice in conceiving, composing, and producing networked texts and may include creative expression, persuasion, and collaboration. Extends traditional literacy skills into emergent, digital genres.	
Prerequisites: ENGL 202 and 220 or 221			
A project-based career preparation course focused on creating, editing, and publishing in print and/or electronic forms. Includes theory and practice of editing, practice with publication tools, and group collaboration.			
ENGL 385 Advanced Studies in Women's Literature	3c-0l-3cr		
Prerequisites: ENGL 121 or 122, 202			
Considers issues of genre and canon revision and why particular genres may have particular appeal for women writers. Also considers major feminist literary theories and their applications. While many readings are by "literary women," course also may consider works by women who are professionals in nonliterary disciplines.			

ENGL 426 ESL Methods and Materials 3c-0l-3cr Prerequisite: Senior standing or instructor permission An introduction to English as a second language theory and practice. Aims: (1) general understanding of current theory and methods of teaching ESL; (2) ability to select appropriate, and adapt existing, materials for elementary and high school ESL students.	ENGL 482 Independent Study var-1-6cr Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.
ENGL 430 Major British Author 3c-0l-3cr Prerequisites: ENGL 122, 202; and one of 210-213 or 226 Examines major works of a single major author, including biographical, literary, and cultural contexts. Places the author within both intellectual/cultural history and literary developments. Major author studied in a particular semester to be announced in advance.	ENGL 483 Honors Thesis var-1-6cr Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.
ENGL 434 Shakespeare 3c-0l-3cr Prerequisites: ENGL 122, 202, and one of 210-213 or 226 Studies Shakespeare's development as a poetic dramatist against background of Elizabethan stage; examines audience, textual problems, language imagery, and philosophy.	ENGL 484 Topics in English Studies 3c-0l-3cr Prerequisites: Declared English major; ENGL 122, 202; minimum 24cr in major Explores themes that may vary according to the faculty member teaching the course. Gives upper-level English majors an opportunity to share their expertise in their track: Literary/Textual/Cultural, Writing, Film, or Language Studies. Students are part of a community of learners and reflect on the ways disciplinary knowledge is constructed in English studies and will construct a portfolio of their work as an English major, both in and out of this class, to assess their growth and potential as readers, writers, and critical thinkers.
ENGL 436 Major American Authors 3c-0l-3cr Prerequisites: ENGL 122, 202; and one of 210-213 or 226 Studies in the literary output of a major American author or authors against the background of the social and literary milieus in which the works were created. Specific subject or subjects to be announced by the instructor.	ENGL 485 Honors English Portfolio/H 1c-0l-1cr Prerequisites: Declared English major; must be enrolled in English Honors Track; must be enrolled in ENGL 484 As one of the requirements for achieving English Honors, students construct an Honors version of the summative portfolio required of all BA majors. Complements the objectives and semester topic of the section of ENGL 484 in which the student is concurrently enrolled.
ENGL 440 Major Figures in Film 3c-0l-3cr Prerequisites: ENGL 121 or 122; and 202, 208 Studies major artists and their contributions to the development of film as an art form from its beginnings to the present. Close analyses of directors, cinematographers, editors, screenwriters, or actors—as individuals or as representatives of a movement in film. Topics vary from semester to semester; thus, one semester may concentrate on a specific director such as Alfred Hitchcock; another semester might study women (as directors, actresses, and editors); and yet another semester might study a collective movement such as film noir.	ENGL 493 Internship var-3-12cr On-the-job training opportunities in related areas. Application and acceptance to internship program required.
ENGL 450 Film Theory 3c-0l-3cr Prerequisites: ENGL 121 or 122; and 202, 208 An introduction to major film theories, studied in relation to representative films. Details the complex relationship between film production and film theory, i.e., how theorists have attempted to explain what appears on the screen, its impact, and its relation to "reality," and how filmmakers have responded to the works of theorists (with the two sometimes being the same). Goes far deeper into understanding film than ENGL 208, which focuses mainly on how film is constructed through aesthetic and institutional processes.	<div> ENVE: Environmental Engineering Department of Physics College of Natural Sciences and Mathematics </div>
ENGL 460 Topics in Film 3c-0l-3cr Prerequisites: ENGL 101, 208 Selected films dealing with a specific, advanced topic are viewed and assessed to explore the different roles that film plays. Topic to be announced in advance.	
ENGL 461 Topics in British Literature 3c-0l-3cr Prerequisites: ENGL 122, 202; and one of 210-213 or 226 Examines major works of a particular topic in British literature by focusing on its cultural and literary contexts. Topic to be announced in advance.	
ENGL 463 Topics in Global Literature and Film 3c-0l-3cr Prerequisite: ENGL 202 Examines major works in English of a particular topic in global literature and/or film by focusing on the transnational contexts of history and culture surrounding the production and/or reception of literature and film. Topic of global literature and/or film to be announced in advance.	ENVE 101 Introduction to Environmental Engineering 3c-0l-3cr Introduces the principles of environmental engineering with specific focus on water pollution and control, hazardous substances and risk assessment, water and wastewater treatment systems, air-pollution and emission control, solid wastes, and global warming.
ENGL 481 Special Topics var-1-3cr Prerequisite: As appropriate to course content Topics vary from semester to semester covering such diverse topics as autobiography, science fiction, folklore, the political novel, black theater, etc.	ENVE 201 Fluid Mechanics 3c-0l-3cr Prerequisites: ENVE 101, MATH 125, PHYS 131 Applies basic laws of fluid mechanics with applications to engineering problems, hydrostatic pressure, buoyancy, open systems and control volume analysis, mass conservation and momentum conservation for moving fluids, viscous fluid flows, flow through pipes, and dimensional analysis.
	ENVE 211 Statics and Solid Mechanics 3c-0l-3cr Prerequisites: ENVE 101, MATH 125, PHYS 131 Examines principles of mechanics, force systems, equilibrium structures, distributed forces, centroids, stress and strain, torsion, bending of beams, shearing stress in beams, combined stresses, principal stresses, deflections of beams, and statically indeterminate members and columns.
	ENVE 301 Environmental Aquatic Chemistry 3c-3l-4cr Prerequisites: ENVE 101, CHEM 112 or 114 Examines fundamental principles of general, analytical, physical, and equilibrium chemistry applicable to water and wastewater treatment systems. Topics include thermodynamics and kinetics of acids and base reactions, carbonate chemistry (alkalinity), air-water exchange, precipitation and dissolution, oxidation-reduction, and chemical analysis of water and wastewater in a laboratory.

ENVE 311 Water Resources Engineering 3c-3l-4cr**Prerequisite:** ENVE 201

Explores hydrologic engineering, including fundamentals of hydrology, rainfall-runoff modeling, hydraulic processes (including both pressurized pipe flow and open channel flow), and hydrologic frequency analysis. These fundamentals are then applied in the computation of design flows and in the analysis and design of hydraulic systems such as pipe networks and storm water management systems.

ENVE 461 Water and Wastewater Treatment 3c-0l-3cr**Prerequisites:** BIOL 202, ENVE 301

An overview of engineering approaches to protecting water quality with an emphasis on fundamental principles. Explores design of systems for treating municipal wastewater and drinking water as well as physical, chemical, and biological processes, including sedimentation, filtration, biological treatment, disinfection, and sludge processing.

ENVE 471 Solid and Hazardous Waste Management 3c-0l-3cr**Prerequisites:** BIOL 202, ENVE 311

Examines the principles of integrated solid waste management. An overview of municipal solid waste (MSW), industrial waste and hazardous waste management, including design and economic analysis. Explores the planning and engineering principles needed to address the growing and increasingly intricate problem of controlling and processing the refuse (solid waste) created by urban societies. Discusses options such as landfilling, composting and incineration from engineering, social, and regulatory perspectives. Reviews physical, chemical, and biological treatment of hazardous waste. Covers federal regulations, permitting and public participation processes and innovative management practices associated with solid and hazardous waste.

ENVE 498 Environmental Engineering 3c-0l-3cr

Prerequisite: Senior standing (90 or more credits) or instructor permission
Capstone design experience involving an interdisciplinary environmental engineering project incorporating real-world clients. Includes visits and tours of field sites as well as interaction with professional engineers. Focuses on water treatment alternatives, regulatory operational needs, sustainability; and implementation of a realistic schedule and project budget.

FCSE: Family and Consumer Sciences Education
Department of Human Development, Fashion, and Interior Design
College of Health and Human Services

FCSE 101 Personal and Family Management 3c-0l-3cr

Personal and family management as a system and its relationship to the global environment, individuals, and families. Formulation of goals, values, and standards; use of decision-making process; sustainability and utilization of resources.

FCSE 143 Financial Wellness 3c-0l-3cr

Theories and principles related to the physical, social, and emotional wellness aspects of individual money management. Information is focused on building a sound financial foundation as a college student and can be applied throughout the life span to ensure future financial well-being. Successful completion fulfills the Liberal Studies Dimensions of Wellness requirement. This course is cross-listed with ECON/FIN 143. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

FCSE 312 Housing and Culture 3c-0l-3cr

Managerial, sociological, economic, and aesthetic aspects of housing and people are investigated as well as a consideration of the environment of the home as part of the community.

FCSE 315 Consumer Economics and Family Finance 3c-0l-3cr

Applies economic, sociological, and psychological principles to family money management problems. Information needed to manage finances effectively and to become a rational consumer is presented.

FCSE 350 Teaching Family Life Education 3c-0l-3cr

Prerequisite: Family and consumer sciences education, child development and family relations, and disability services majors, or instructor permission
Emphasizes teaching family life education in family and consumer sciences classrooms and through community organizations and agencies. Lessons are planned and implemented using a variety of instructional methods incorporating adaptations and modifications for special needs learners, basic skills, global concerns, and use of a problem-solving/decision-making approach. Planning of content, learning activities, instructional materials, and evaluation based on clearly stated objectives is emphasized. A microcomputer spreadsheet is utilized to manage a department budget and a grade book. Participation in professional organization activities is expected.

FCSE 413 Problems in Consumer Economics 3c-0l-3cr**Prerequisite:** FCSE 315 or Economics

Problems of consumer-seller relationships studied with an emphasis given to effects of current economic and social forces. Governmental and private protection agencies that aid the consumer are reviewed. Individual investigations required.

FCSE 416 Problems in Family Finance 3c-0l-3cr**Prerequisite:** FCSE 315

In-depth theories and principles in personal and family finance and the rights and responsibilities of consumers are emphasized. Opportunities are provided to explore specific areas of interest.

FCSE 433 Study Tour var-1-6cr**Prerequisite:** Upper-level standing

An opportunity is provided to visit business establishments and cultural centers concerned with household equipment, furnishings, textiles, clothing, and housing in America as well as abroad. Museums, factories, designers' showrooms, distribution centers, stores, cultural events, and seminars are included. May be repeated for a total of 6cr.

FCSE 450 Teaching Vocational and Family Consumer Science Education 3c-0l-3cr**Prerequisite:** FCSE 350

Emphasizes teaching vocational family and consumer sciences in consumer/homemaking and occupational family and consumer sciences programs. Federal legislation affecting family and consumer sciences is analyzed for use in program decisions. Emphasizes program development using CBVE model, development of individual learning packets, vocational youth organizations, advisory committees, family and consumer sciences and vocational educational priorities, professional organizations, proposal development for funding, impact on public policy, marketing family and consumer sciences, and development of a personal philosophy of family and consumer sciences education.

FDED: Foundations of Education
Department of Professional Studies in Education
College of Education and Communications

FDED 440 Orientation to Teaching in Urban Centers 2c-0l-2cr

Provides an understanding of urban learners and their unique learning needs and conditions. Emphasizes understanding the origin of attitudes and values and how these affect the relationships that exist between students and teachers. Special attention given to practical application of theoretical information to problems of urban education.

FDED 441 Field Experiences in Urban Education 3c-0l-3cr

A specialized experience for students who are considering teaching in inner-city schools. Aspects to be emphasized include physical characteristics of community, background and aspirations of children and parents, and specialized teacher competencies, classroom management, planning, instructional materials, teaching strategies, and evaluation. All participating preservice teachers receive significant exposure to English language learners and students with special needs. Schools selected for student experiences are located in Philadelphia. May be substituted for EDUC 242 with program approval and completion of Step 1 for teacher certification.

FDNT: Food and Nutrition
Department of Food and Nutrition
College of Health and Human Services

FDNT 110 Careers in Food and Nutrition 1c-0l-1cr

Career possibilities for nutrition majors are explored. Students are guided in clarifying their professional goals and become acquainted with the educational and experiential requirements necessary to attain these goals.

FDNT 143 Current Issues in Nutrition and Wellness 3c-0l-3cr

Introduces contemporary nutrition issues as they relate to personal food choices and overall health. Completion of FDNT 143 fulfills the Liberal Studies Dimensions of Wellness requirement. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

FDNT 145 Personal Nutrition 3c-0l-3cr

Encourages students to practice and adopt food behavioral choices that can be applied to everyday life. Evidence-based information concerning weight control, nutrients, diseases, and lifecycle nutrition is presented. Appropriate for students who are not nutrition majors or minors. (Titled Introduction to Nutrition before 2014-15.)

FDNT 150 Foods 3c-0l-3cr

Prerequisites: Grade of "C" or better in FDNT 151, and CHEM 101 or 111
 Basic principles of food: composition, sanitation, preparation, and preservation.

FDNT 151 Foods Laboratory 0c-3l-1cr

Prerequisite: CHEM 101 or 111

Application of the basic principles of food preparation.

FDNT 212 Nutrition 3c-0l-3cr

Prerequisite: CHEM 102 or 112

Sources and functions of nutrients, interdependence of dietary essentials, and nutritive value of an optimum diet are studied. Attention given to varied conditions in human life.

FDNT 213 Life Cycle Nutrition 3c-0l-3cr

Prerequisite: FDNT 212 with a grade of "C" or better

A detailed study of nutrition during all stages of the human life cycle; current issues and research as they impact these developmental stages.

FDNT 245 Sports Nutrition 3c-0l-3cr

Prerequisite: FDNT 145 or 212

Emphasizes knowledge and application of sports nutrition principles. The impact of the macro- and micro-nutrients on physical performance is discussed in light of current scientific research and applied to realistic dietary recommendation for all types and levels of athletes.

FDNT 250 Quantity Foods in Healthcare and Schools 3c-6l-6cr

Prerequisites: FDNT 150, 151 or instructor permission

A problem-based learning approach to food service principles, which guide dietetic professionals in practice. Students research and present case studies within the scope of the healthcare industry, and school feeding includes procedures for inventory control, food production, and purchasing as applied to schools and the healthcare arena. Laboratory experience reinforces didactic concepts.

FDNT 355 Medical Nutrition Therapy I 3c-0l-3cr

Prerequisites: FDNT 212 with a grade of "C" or better and BIOL 155 or 150/151

An interpretation of anthropometric, laboratory, clinical, and dietary data in nutrition assessment. Pathophysiology of and evidence-based medical nutrition therapy for caloric imbalance, diabetes, and cardiovascular diseases. Use of food exchange systems in diet prescription and menu planning.

FDNT 362 Experimental Foods 2c-3l-3cr

Prerequisites: FDNT 150, 355 or concurrently, MATH 217

The experimental study of foods, relating chemical and physical properties to reactions and processes occurring in food systems.

FDNT 364 Methods of Teaching Food and Nutrition 3c-0l-3cr

Prerequisite: FDNT 213 with a grade of "C" or better

Focuses on nutrition education methods to support health-promoting dietary behaviors for different populations in a variety of settings. Provides experience in the development of theory-based educational programming via assessing needs, developing objectives, creating/selecting accompanying materials and activities, implementing appropriate instructional strategies, assessment, and evaluation.

FDNT 402 Community Nutrition 3c-0l-3cr

Prerequisite: FDNT 212

Nutritional implications of both good and poor nutrition for all age groups in home and community situations are studied. Corrective and preventive measures emphasized. Taught spring semester only.

FDNT 410 Food, Nutrition, and Aging 3c-0l-3cr

Prerequisite: Junior status

Relationship of food to health maintenance and special dietary problems during the middle and later years.

FDNT 415 Sustainable Nutrition 3c-0l-3cr

Explores food system sustainability issues from farm to fork, including food production, preparation, processing, packaging, and distribution. Assesses the sustainability of current dietary recommendations and the environmental impact of food choices. Evaluates food security from a national and global perspective.

FDNT 422 Public Health Nutrition and Epidemiology 3c-0l-3cr

Prerequisites: FDNT 145 or 212 and MATH 214 or 216 or 217, or department permission

Identifies population-based needs and approaches for prevention and alleviation of diet-related conditions. Explores methodological issues involved in the design, conduct, analysis, and interpretation of studies investigating the relationship between nutritional status, diet, and disease. Examines the application of nutrition research related to nutrition assessment and program and policy design and evaluation to improve the nutritional status and health of diverse population groups.

FDNT 430 Professional Topics in Food and Nutrition 3c-0l-3cr

Prerequisites: FDNT 355, 364, HOPS 256, PSYC 101

Topics include promoting food and nutrition services and programs, career planning and development, ethical challenges to dietitians, quality assurance standards, and impact on the legislative process.

FDNT 455 Medical Nutrition Therapy II 3c-0l-3cr

Prerequisite: FDNT 355 with a grade of "C" or better

Pathophysiology of and evidence-based medical nutrition therapy for disorders of the gastrointestinal, renal, hepatic, and immune systems, inborn errors of metabolism, cancer. Nutrition support.

FDNT 458 Advanced Human Nutrition 4c-0l-4cr

Prerequisites: CHEM 255 or 351, FDNT 355, MATH 217

An in-depth study of the nutrients and their function within the cell. Incorporation of the principles of physiology and biochemistry in the study of nutrition. Emphasizes applying current research and evaluation of research methodology. (Does not count toward MS degree in FDNT requirements.)

FDNT 463 Nutrition Counseling 2c-3l-3cr

Prerequisites: FDNT 355, PSYC 101, FDNT 455 or concurrently

Use of intervention strategies in prevention and treatment of disease through diet. Supervised practicum (three hours per week) counseling clientele in normal and therapeutic nutrition.

FDNT 470 Human Food Consumption Patterns 3c-0l-3cr

Prerequisites: One social science course

An exploration of human food consumption behaviors from food production to individual and societal consumption patterns. Influencing factors discussed include agronomic, economic, geographical, nutritional, political, sociological, and psychological factors. The ethics and morality of food distribution will also be discussed. Students may not enroll in this course if they have taken the corresponding section of LBST 499 Food and Culture.

FDNT 471 Integrative Nutrition in Complementary and Alternative Healthcare 3c-0l-3cr

Prerequisites: FDNT 145, 212 or departmental permission

Explores the foundation of complementary, alternative, integrative, and functional nutrition theories and practices. Differentiates among traditional, complementary, alternative, integrative, and functional nutrition models as related to food, supplements, herbs, and disease. Evaluates current research related to complementary, alternative, integrative, and functional nutrition.

FDNT 482 Independent Study var-1-6cr

Prerequisites: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost; must have earned 60cr
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

FDNT 484 Senior Seminar 1c-0l-1cr

Prerequisite: Senior status

Emphasizes individual review of food and nutrition literature with formal presentation and discussion of current research.

FDNT 493 Internship var-3-12cr

Prerequisite: Must have earned 60cr

An opportunity to work away from the university in supervised situations at healthcare facilities, foodservice, community, or nonprofit organizations. Students receive career-related experiences. Must meet university internship requirements.

Note: White uniforms, including white shoes, are required for all lab courses in which food is prepared. Students must meet the professional dress requirements of the department.

**FIAR: Fine Arts
College of Fine Arts**

FIAR 101 Introduction to Fine Arts 3c-0l-3cr

An exploration of visual art, theater, and music, examining their conceptual and aesthetic underpinnings, selected works, and their primary and similar functions in the expression of cultural, political, and personal views of the world around us. Class experience includes the analysis of at least one major work of each form, attending at least two live performances, viewing of selected works, and creative activities. If it should be necessary for a student who fails this course to take a D/F repeat, any one of the following courses may be substituted: ARHI 101, MUHI 101, THTR 101, DANC 102.

FIAR 401 Creativity and Innovation in the Arts 3c-0l-3cr

Focuses on contemporary big ideas in the arts, the connections between the arts, and the place of the arts in broader society and in further cultivating innovative thinking in the arts community. Promotes student development of new ideas into viable potential directions for their future professional lives.

**FIN: Finance
Department of Finance and Legal Studies
Eberly College of Business and Information Technology**

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

FIN 143 Financial Wellness 3c-0l-3cr

Theories and principles related to the physical, mental, social and emotional wellness aspects of individual money management. Information is focused on building a sound financial foundation as a college student and can be applied throughout the life span to ensure future financial well-being. Successful completion fulfills the Liberal Studies Dimensions of Wellness requirement. Cross-listed with ECON/. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

FIN 310 Fundamentals of Finance 3c-0l-3cr

Prerequisites for business majors: ACCT 202, MATH 214

Prerequisites for nonbusiness majors: ACCT 202, MATH 214 or 217 (MATH 214 recommended)

The study of valuation models, financial statement analysis and forecasting, capital budgeting methods, and working capital management. Also includes an introduction to risk and return, capital markets and institutions, and security valuation.

FIN 315 Financial Analysis Using Electronic Spreadsheets 3c-0l-3cr

Prerequisite: BTED/COSC/IFMG 101

Develops the financial students' computer modeling and analysis skills. Teaches how to utilize current computing resources, electronic spreadsheet, and other computing software to analyze, model, and solve a variety of financial problems.

FIN 320 Corporate Finance 3c-0l-3cr

Prerequisite: Grade of "C" or better in FIN 310

The study of corporate financial management and decision making, its theory, and application. Provides a higher level of study and many of the same topics covered in FIN 310, particularly in the area of capital budgeting. Other topics include capital asset pricing models, costs of capital, capital structure, leasing bond refunding, and financial distress.

FIN 324 Principles of Investments 3c-0l-3cr

Prerequisite: FIN 310

An introduction to securities markets, trading, and valuation. Topics include security types and characteristics, the mechanics of trading, valuation models for fixed-income securities and common stock, mutual fund evaluation, basics of options and futures, and tax-advantaged investments.

FIN 360 Insurance and Risk Management 3c-0l-3cr

Prerequisite: FIN 310

Covers the nature of risk, the application of the risk management process to business risk management problems, and the essentials of insurance contracts and insurance markets. Discusses appropriate methods of risk control and risk financing. The primary focus is on accidental losses resulting from situations involving pure risks, although financial risk management techniques for dealing with speculative risks are introduced.

FIN 365 Student Managed Investment Portfolio I—Valuation 1.5c-0l-1.5cr

Prerequisite: Finance and accounting majors or instructor permission

Applies empirical and theoretical concepts to real-world portfolio management and investment decisions. Different investment strategies and valuation models are used to reinforce investment principles and practices learned in previous finance courses.

FIN 366 Student Managed Investment Portfolio II—Performance 1.5c-0l-1.5cr

Prerequisite: FIN 365

Students assess the performance of a stock portfolio managed by their peers. Performance measures focus on risk and return and include financial ratio analysis and benchmark comparisons.

FIN 401 Energy Finance 3c-0l-3cr

Prerequisite: FIN 310 or equivalent/permission

Presents a strategic framework for examining energy finance strategies used primarily in the oil and gas industry. Discusses the wide range of tools available for financing energy projects such as equity, debt, tax credits, and other methods used by corporations. Extends the financing framework by describing current theories and applications in developing the energy product and how it is priced and delivered to the end user.

FIN 410 Financial Institutions and Markets 3c-0l-3cr

Prerequisite: FIN 324

A review of the structure of financial institutions and money and capital markets. Provides the knowledge of the theory and practices of managing financial institutions, with particular emphasis on the management of financial risks.

FIN 420 Investment Analysis**3c-0l-3cr****Prerequisites:** FIN 320, 324

Integrates the work of the various courses in the finance areas and familiarizes the student with the tools and techniques of research in the different areas of investments.

FIN 422 Seminar in Finance**3c-0l-3cr****Prerequisites:** FIN 320, 324, seniors only

Primarily for the senior finance major, covers topics in all areas of finance by using recent articles, cases, discussions, speakers, and a financial simulation game.

FIN 424 International Financial Management**3c-0l-3cr****Prerequisite:** FIN 310

The financial management concepts, useful in a single-country context, are adapted for the international variables and constraints caused by being international. Provides insight into unique issues and problems the manager of the multinational enterprise will face, such as working capital management, capital budgeting process, financing and investing abroad, capital and money markets, foreign exchange markets, and risk management.

FIN 425 Financial Derivatives**3c-0l-3cr****Prerequisites:** FIN 320 and 324 or equivalent/permission for FIN 425 and 324 or equivalent/permission for FIN 525

Provides an understanding of how the derivatives markets work, how they are used, and how prices are determined. Includes the common types of derivatives, their characteristics and properties, and trading methods and strategies. Also, covers fundamental pricing models based on arbitrage pricing theory, binomial, and Black-Scholes models.

FIN 481 Special Topics**var-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are offered primarily for upper-level undergraduate students.

FIN 482 Independent Study**var-3cr****Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

FIN 493 Finance Internship**var-3-12cr****Prerequisites:** FIN 310, 315, 324; prior approval through advisor, faculty member, department chairperson, and dean; minimum cumulative 2.0 GPA; major 2.5 GPA

Provides practical experience in the finance field to develop knowledge and provide application of theory to actual problems in a nonclassroom situation. Three credits are awarded for at least 120 hours of on-site work, up to 12cr for at least 480 work hours. A maximum of 3cr may be applied toward the finance major area elective requirements. Additional internship credits must be used as business electives only.

FNLG: Study Abroad and Comparative Literature**Department of Foreign Languages****College of Humanities and Social Sciences****FNLG 121 Humanities Literature****3c-0l-3cr****Prerequisite:** ENGL 101

Introduces students to works of imaginative literature through a careful analysis of poetry, drama, and prose fiction (short story and/or novel) from a variety of periods and cultures, including texts by women and ethnic and racial minorities. Also offered as ENGL 121. ENGL/FNLG 121 may be used interchangeably for D/F repeats; may not be counted for duplicate credit.

FNLG 391 Selected Works from the Medieval Period **3c-0l-3cr****Prerequisites:** ENGL/FNLG 121 or ENGL 122, 202

A comparative study of selected works of major importance per se and as representative of major themes of medieval European literature. Also listed as ENGL 391.

FNLG 395 Selected Writers from 20th-Century Europe **3c-0l-3cr****Prerequisites:** ENGL/FNLG 121 or ENGL 122, 202

A comparative study of selected works of major importance per se or as representatives of major trends in 20th-century literature. Also listed as ENGL 395.

FRNC: French**Department of Foreign Languages****College of Humanities and Social Sciences****FRNC 101 Basic French I****4c-0l-4cr****Prerequisite:** Appropriate score on the placement test (WebCAPE score between 0 and 285)

For beginning students. Not open to native speakers, except by special permission of department. Students must achieve an appropriate placement test score to enroll (score between 0 and 285). Special focus on aural/oral skills. Students learn in a multimedia environment. Students converse and ask questions in simple present tense. They become acquainted with elements of daily lives of native speakers of French around the world. Attendance is mandatory. May not register for, or take a D/F repeat in, FRNC 101 when credit has already been received for a higher-numbered French course.

FRNC 102 Basic French II**4c-0l-4cr****Prerequisite:** FRNC 101, or qualifying score on the WebCAPE placement test (286-362), or instructor permission

For beginning students. Students must achieve an appropriate placement test score to enroll (score between 286 and 362). Special focus on aural/oral skills. Students learn in a multimedia environment. Students converse and ask questions in simple present tense. They can now express commands and directions and are introduced to the expression of punctual actions in the past. They further investigate the daily lives of native speakers of French around the world. Attendance is mandatory. May not register for, or take a D/F repeat in, FRNC 102 when credit has already been received for a higher-numbered French course.

FRNC 201 Intermediate French**4c-0l-4cr****Prerequisite:** FRNC 102, or qualifying score on the WebCAPE placement test (score above 362), or instructor permission

Continued study of French; development of listening, reading, speaking, and writing, but primary emphasis is on aural/oral skills. Students use a multimedia environment to learn to converse and ask questions in the past. Students learn the different way to express completed action that occurred at a specific time in the past vs. expressing an action that continued in the past over an indefinite, undetermined period of time; students review how to narrate and describe in the past, ask and give directions, talk about the future, avoid repetitions, learn to combine simple sentences, express and understand conditional sentences, express and understand subjective statements, and understand indirect discourse. Through the use of multimedia, students continue their inquiries into the daily lives of native speakers of French around the world. Attendance is mandatory. May not register for, or take a D/F repeat in, FRNC 201 when credit has already been received for a higher-numbered French course. Liberal Studies Humanities credit is given for this course.

FRNC 220 Intermediate French Conversation**3c-0l-3cr****Prerequisite:** FRNC 201, or qualifying score on the WebCAPE placement test (score above 402), or instructor permission

Intensive work on communication skills with specific emphasis on spontaneous interpersonal speaking, discourse strategies, vocabulary building, and pronunciation. Required for all minors. Students may not register for, or take a D/F repeat in, FRNC 220 when credit has already been received for a higher-numbered French course.

FRNC 230 Intermediate French Composition and Grammar**3c-0l-3cr**

Prerequisite: FRNC 220 or equivalent; may be taken concurrently
Intensive practice in written expression and communication in French together with a grammar review. Intermediate-level language course with the goal of fostering writing in French for a variety of practical purposes. Review and expansion of specific grammar points are integrated into each unit. Taught in French.

FRNC 281 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content
Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

FRNC 370 Introduction to French Literature**3c-0l-3cr**

Prerequisite: FRNC 341 or 353

Develops French reading skills, to provide tools for literary interpretation of texts, and to introduce major literary works of France and the French-speaking world.

FRNC 390 Teaching Elementary School Content in French and German**3c-0l-3cr**

Prerequisite: Instructor permission

Explores issues relevant to the teaching and learning of French and German in the elementary school (grades K-8). Current theories of child second-language acquisition are treated. These theoretical foundations form the basis for the development of objectives and activities that integrate the teaching of foreign language and culture with elementary school subject content. Students gain practical experience in planning and implementing lessons, assessing student learning, and selecting materials appropriate to the needs and interests of young learners.

FRNC 441 Advanced French Grammar**3c-0l-3cr**

Prerequisite: FRNC 341

Builds on previous knowledge of French grammar, with a view to perfecting control of more complex structures. These structures include complex sentences, the subjunctive, hypothetical statements, and passive voice. Emphasizes written expression.

FRNC 481 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content
Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times.

FRNC 482 Independent Study**var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources. An opportunity to engage in an in-depth analysis of some topic dealing with the French language and culture through consultation with a faculty member.

FRNC 483 Honors Thesis**var-1-6cr**

Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

FSMR: Fashion Merchandising**Department of Human Development, Fashion, and Interior Design****College of Health and Human Services****FSMR 112 Fundamentals of Clothing Construction** **1c-3l-3cr**

Principles and techniques involved in fundamental clothing construction and fitting are analyzed. Directed laboratory experiences provide an opportunity to solve individual problems in garment structure through the application of principles.

FSMR 158 Fashion Show Production**3c-0l-3cr**

Focuses on developing a practical understanding of fashion through image, language, and events. All aspects of production and management of fashion shows are addressed, including the importance of teamwork. (Offered as FSMR 358 before 2016-17.)

FSMR 180 Introduction to Fashion**3c-0l-3cr**

A survey of fashion careers and industry functions including design, production, retail channels, and current trends.

FSMR 212 Advanced Clothing Construction**1c-3l-3cr**

Prerequisite: FSMR 112 or placement (by exam)
Principles of advanced fitting and clothing construction are applied and analyzed. Offered even years, fall semester.

FSMR 215 Textiles**3c-0l-3cr**

Prerequisite: Sophomore standing

An interpretation of basic textile knowledge with emphasis on fiber, yarn, fabric structure, coloration, and fabric finishes. Discussions include importance of factors related to consumer information, protection, and satisfaction. (Offered as FSMR 314 before 2016-17.)

FSMR 252 Aesthetics of Fashion**3c-0l-3cr**

The study of contemporary apparel design and the relationship of design elements and principles to personal characteristics and social/professional orientation.

FSMR 258 Fashion Brand Merchandising**3c-0l-3cr**

Focuses on contemporary concepts, phrases, branding terms, and theoretical frameworks for most fashion brand-relative activities. Applies concepts about the role of branding in fashion through projects, such as case studies, exercises, shadowing activities, and developing their own fashion brand.

FSMR 262 Fashion Forecasting**3c-0l-3cr**

Prerequisite: FSMR 180

A study and an analysis of the global fashion society and the trends that emerge. Evolving styles, changes in buying habits, and economic conditions are assessed to predict fashion consumer behavior. An emphasis on the interrelationships among apparel industry segments and the application of fashion theories to the forecasting process.

FSMR 280 Introduction to Apparel Buying**3c-0l-3cr**

Prerequisites: FSMR 180 with a grade of "C" or better and ACCT 201
Focuses on using mathematical concepts in merchandising applications used for apparel buying. Students develop and determine assortment plans, cost of merchandise, profitability, and retail sale prices.

FSMR 281 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

FSMR 303 Visual Merchandising**3c-0l-3cr**

Prerequisite: Junior standing

Students design and arrange display and selling areas in relationship to merchandising trends and consumer demands. Emphasizes promotion techniques and merchandise sales through effective use of space, design, and color.

FSMR 357 Global Issues in Textiles and Apparel 3c-0l-3cr**Prerequisite:** Junior standing

The study of the global textiles and apparel industry with emphasis on the US textile complex and the US market within an international context.

FSMR 380 Applications in Apparel Buying 3c-0l-3cr**Prerequisite:** FSMR 280 with grade of "C" or better

Focuses on the development of a six-month stock and sales plan for a retail business using computer applications. Includes projecting retail sales, controlling inventory, calculating the amount of merchandise to purchase, determining markup percentages, and effectively using markdowns to manage inventory.

FSMR 385 Ready-to-Wear Analysis 1c-3l-3cr**Prerequisite:** FSMR 112

An examination and evaluation of the quality of ready-to-wear apparel through construction, style, fit, marketability, and price.

FSMR 434 Quality Control in Textiles 1c-3l-3cr**Prerequisite:** FSMR 215

Physical properties explored through microscopic examination and use of textile testing equipment for fabric analysis.

FSMR 456 Historic Costume 3c-0l-3cr**Prerequisite:** Junior standing

A chronological study of historic costume from ancient times to the present day with emphasis on the effect of aesthetic, economic, geographic, political, religious, and social factors on the design of clothing worn.

FSMR 468 Supply Chain Management in Textiles and Apparel 3c-0l-3cr**Prerequisite:** Junior standing or above

Examines supply chain management for textile and apparel products through the network of suppliers, manufacturers, distributors, retailers, and customers. Emphasis is placed on the dynamic nature of supply chain management in the global textile and apparel industry and the interrelationships among the segments of the textile-apparel-retail complex.

FSMR 480 Professional Development in the Fashion Industry 3c-0l-3cr**Prerequisite:** Senior standing

Knowledge gained in major and additional requirement courses is applied to individual career goals. Students have the opportunity to pursue related areas not directly covered in previous course work, with emphasis on independent research, analytical thinking, and communication skills.

FSMR 481 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

FSMR 482 Independent Study var-1-3cr**Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Particular consumer considerations are independently investigated in the areas of housing, home equipment, interior design, clothing, and textiles, or in the management of resources. May be repeated for a total of 3cr. Students meet with a faculty member at least five hours per credit.

FSMR 493 Internship var-1-12cr**Prerequisites:** Approval of instructor and department chairperson; upper-level standing

A practical experience related to the student's major area of study with objectives, supervised experience, and evaluation. May be repeated for a total of 12cr. (Offered as CNSV 493 before 2016-17.)

GEOG: Geography**Department of Geography and Regional Planning****College of Humanities and Social Sciences****GEOG 101 Geography of Human Environment Interaction** 3c-0l-3cr

The physical environment is modified by human activities, largely as a consequence of the ways in which societies value and use earth's natural resources, but human activities and distributions are, in turn, influenced by earth's physical features and processes. These themes are addressed by examining the geography of environmental impacts such as tropical deforestation, global climate change, energy development, urban growth, and agricultural land use. Also considered are natural hazards such as hurricanes, earthquakes, volcanic eruptions, and flooding.

GEOG 102 Geography of United States and Canada 3c-0l-3cr

A conceptually based introductory-level geography course that focuses on the American landscape. Includes mapping culture regions; tracing settlement patterns; resource use; environmental perceptions; the interplay of urbanization, industrialization, postindustrialization, and spatial mobility; the occurrence of economically disadvantaged landscapes; and the role individuals and society have in the creation of the graphic landscape.

GEOG 104 World Geography: Global Context 3c-0l-3cr

Relates theories of the discipline of geography to current world issues and global patterns. Emphasizes local versus global strategies of resource management, spatial legacies of colonialism, contemporary multiscale issues with workforce migration, urban structure, disease, and globalization. Focuses on global patterns of development through comparative approaches and understanding of human and physical geographic characteristics of world regions.

GEOG 105 Our Digital Earth: Mobile Devices, Web Applications, and Geospatial Technology 3c-0l-3cr

An overview of evolving geographically-enabled (geospatial) technologies and applications, and explores the wide-ranging impacts of geospatial technology on human decision-making, perceptions, and society. Covers location-based services, including personal navigation, global positioning systems (GPS), web-based mapping services, and social networks with real-time location information commonly found on personal mobile devices such as phones, tablets, and personal computers. Explores the technologies and societal implications of our digital planet with particular focus on the geospatial technologies that make geographically-enabled mobile and web applications possible.

GEOG 109 Geographic Information Science and Systems for Energy Applications 3c-0l-3cr

Provides students with knowledge of the theoretical basis of Geographic Information Systems (GIS) and geospatial technologies and their application for the energy sectors. Covers the specifics of selected GIS and database software packages. Develops skills to conceptualize energy-related GIS applications, use GIS software packages, manipulate and query geographic data to solve problems, perform simple spatial analysis, and understand how to utilize GIS for energy-related analyses.

GEOG 213 Cartography I 3c-0l-3cr

Introduces principles of thematic map construction. Emphasizes techniques of choropleth mapping and the production of scientific graphs and charts. (Also offered as RGPL 213; may not be taken for duplicate credit.)

GEOG 230 Cultural Geography 3c-0l-3cr

Introduces cultural geography, including folk and popular culture, religion, language, ethnicity and race, population, agriculture, urban and political geography, human relationships with the natural environment, culture regions, cultural diffusion, cultural interaction, globalization, and cultural landscapes.

GEOG 231 Economic Geography 3c-0l-3cr

An introduction to geographic concepts, methods, and skills related to spatial patterns of production, consumption, and exchange over the earth's

surface. Emphasizes a global perspective using a combination of theoretical and empirical concepts.

GEOG 251 Geography of Pennsylvania 3c-01-3cr
Regions of Pennsylvania are examined in detail to identify man-environment relationships. Soils, topography, climate, vegetation, population, and economic patterns are studied.

GEOG 253 Geography of Europe 3c-01-3cr
A critical analysis and understanding of historic factors that led to the creation of the European Union. Critically examines current and future economic and political challenges that face the European Union. A survey of the human geography and physical resources of contemporary Europe in historical and global context. Covers a broad range of topics, including Europe, in historic perspective, physical geography, human-environment interactions, population dynamics, culture and change, economic and agricultural development, urbanization and migration, and political geography.

GEOG 254 Geography of Russia, Central Eurasia, and Eastern Europe 3c-01-3cr
Examines the Russian Federation, former Soviet satellites, and the European and Asiatic successor states. The region is the realm of Eurasian languages, historical schisms between eastern and western Europe, and the geographical legacies of the Tsarist and Soviet empires. Topics include terrain and environment, population, economic regions, resources, and geopolitics. These are studied in the context of environmental location and position between Eastern and Western power centers of the 21st century.

GEOG 255 Geography of Africa 3c-01-3cr
A critical geographic analysis and understanding of Africa, and the continent's level of development against the background of traditional misconceptions about the region. Offers a survey of the human geography and physical resources of contemporary Africa in a historical and global context. Covers a broad range of topics, including Africa, in historical perspective, physical geography, human-environment interactions, population dynamics, culture and change, economic and agricultural development, urbanization and migration, and political geography.

GEOG 256 Geography of East and Southeast Asia 3c-01-3cr
A critical geographic analysis and understanding of East and Southeast Asia including its natural environment, human landscapes, and historical geography, and how these aspects of place interact with each other in space. Examines East and Southeast Asia at multiple scales by providing a comprehensive analysis of spatial patterns within the region, across the region as a whole, and by considering how East and Southeast Asia interface with a globalizing planet. Explains the political and economic evolution of this region from the period of global colonialism, through the rise and fall of Marxist ideology to its current position as the emergent Asian Pacific Rim. Covers a broad range of topics, including: historical geography; physical geography; human-environment interactions; population dynamics; cultural geography; economic and agricultural development; urbanization and migration; and political geography. (Titled Geography of East Asia before 2014-15.)

GEOG 257 Geography of South and Southwest Asia 3c-01-3cr
A geographical exploration and analysis of South and Southwest Asia. A survey overview of the complex physical and human geographies of the region, including demographic transition, gender inequalities, issues of development in the postcolonial global era, religious diversity, the Israeli-Palestinian conflict, US foreign policy toward the region, the exploitation of resources (particularly oil), terrorism, and the rise of radical Islamist movements. (Titled Geography of South and Southeast Asia before 2014-15.)

GEOG 261 Geography of Wine 3c-01-3cr
The geography of the grape, its production, products, social significance, and consequences of the global wine trade are explored. Students develop an appreciation for the environmental constraints and characteristics of wines and wine regions. Field trips to visit wineries are an essential element. Verifiable proof of 21 years of age required for voluntary wine-tasting activities.

GEOG 313 Cartography II 3c-01-3cr
Prerequisite: GEOG 213
Provides an understanding of the compilation and use of maps and quantitative data. Develops skills essential to the construction of various types of maps. (Also offered as RGPL 313; may not be taken for duplicate credit.)

GEOG 314 Map and Photograph Interpretation 3c-01-3cr
Maps and air photographs, along with remote sensing materials, permit inventory, and analysis of geologic, land use, urban development, and other landscape phenomena. The understanding of these materials and associated tools for their use is presented. (Also offered as RGPL 314; may not be taken for duplicate credit.)

GEOG 316 Introduction to Geographic Information Systems 3c-01-3cr
Presents automated methods for creating, maintaining, and analyzing spatial data. Includes (1) specialized GIS hardware and software; (2) vector vs. raster vs. object-oriented spatial data structures; (3) creation and manipulation of geographic data files; (4) database design and management concepts; (5) spatial analysis; and (6) cartographic design. (Also offered as RGPL 316; may not be taken for duplicate credit.)

GEOG 331 Population Geography 3c-01-3cr
Spatial variations in numbers, characteristics, and dynamics of human population, models, and theoretical constructs relevant to demographic structures and processes are studied, as well as major world and regional problems.

GEOG 332 Urban Geography 3c-01-3cr
Basic concepts of urban geography including site, situation, function, urban land use, urban structure, and urban hierarchy are introduced. Relationships between urban geography and urban planning are explored. (Also offered as RGPL 332; may not be taken for duplicate credit.)

GEOG 333 Trade and Transportation 3c-01-3cr
Deals with the spatial aspects of transportation systems and their use. Discusses circulation, accessibility, time and distance concepts, and trade patterns. (Also offered as RGPL 333; may not be taken for duplicate credit.)

GEOG 334 Political Geography 3c-01-3cr
Geographic factors and conditions are analyzed as they relate to the character and function of states. Political institutions are evaluated in light of geographic conditions.

GEOG 341 Climatology 3c-01-3cr
Examines the elements of weather and climate on earth. The location and causes of global climatic regions are examined in relation to moving pressure and wind systems. Also considers the climatic history of the planet and recent human modifications of the atmospheric environment. (Also offered as RGPL 341; may not be taken for duplicate credit.)

GEOG 342 Physiography 3c-01-3cr
Focuses on landform types and their spatial distribution. Emphasizes the tectonic forces that build landforms and the weathering and erosional processes that erode and shape surface features. The relationship between human activities and landforms is also considered. (Also offered as RGPL 342; may not be taken for duplicate credit.)

GEOG 343 Geography of Fresh Water Resources 3c-01-3cr
Students learn about surface and groundwater as a resource with unique properties. Fresh water is defined physically by storage in the hydrologic cycle and the values assigned by different cultures. Problems featured relate to consumptive and withdrawal water uses, the problems of water supply and scarcity, water law and its inconsistencies, flooding and floodplain management, sources of contamination and pollution, wetlands, and case studies of selected river basins. (Also offered as RGPL 343; may not be taken for duplicate credit.)

GEOG 345 Biogeography for Environmental Managers 3c-01-3cr
Prerequisite: One course from GEOG 341, 342, BIOL 103, 115
Examines the distribution of plants and animals across the earth's surface, as influenced by natural and human processes. Emphasizes landscape and

regional habitat dynamics as they relate to environmental planning and management. Field trips supplement lectures and readings. (Also offered as RGPL 345; may not be taken for duplicate credit.)

GEOG 404 Transportation Planning 3c-0l-3cr

Prerequisite: GEOG/RGPL 333 or RGPL 350 or one course from the Economic Geographer Concentration

Introduces the major themes and methods of transportation planning, particularly in an urban context. It is project oriented and supported by readings from the scholarly literature covering themes such as modes of transit, land use implications, and commercial development. Reading assignments are organized topically and coordinated with two workbook projects that develop applied skills. Topics include theory, empirical description, and methodological practice. (Also offered as RGPL 404; may not be taken for duplicate credit.)

GEOG 409 Spatial Analysis Applications in the Energy Sectors Workshop 3c-0l-3cr

Prerequisite: GEOG 109

Characterizes the spatial representation and analysis techniques used by public, private, and nonprofit entities engaged in the energy industries. Focuses in particular on the implementation of energy resource applications including exploration and development, environmental and cultural compliance, logistics, production analysis, and infrastructure maintenance.

GEOG 411 History of Geography 3c-0l-3cr

Prerequisites: GEOG 230 and at least 9 other GEOG credits

Deals with history of the discipline, great ideas, major scholars, leading problems, and unresolved issues.

GEOG 412 Research Seminar 3c-0l-3cr

Prerequisite: GEOG 411

This senior seminar and workshop constitute a capstone course that focuses on recent research in the major field. Students carry out an applied research project on a topic of local or regional importance. (Also offered as RGPL 412; may not be taken for duplicate credit.)

GEOG 415 Remote Sensing 3c-0l-3cr

Deals with air photographs, satellite imagery, thermal sensing, and radar imagery and their application to deriving information about the earth's physical and cultural landscapes. (Also offered as RGPL 415; may not be taken for duplicate credit.)

GEOG 419 Geographic Information Systems (GIS) for Environmental Applications 3c-0l-3cr

Prerequisite: 60 completed credits or instructor permission

Provides knowledge of the theoretical basis of geographic information systems (GIS) and its applications for environmental scientific analysis. In the process of demonstrating some of the capabilities of GIS, the specifics of selected GIS and database software packages will also be covered. Students develop the skills to use GIS packages, manipulate and query geographic data to solve problems, perform simple spatial analysis, and understand how to utilize GIS for environmental analysis and resource management.

GEOG 420 Technical Issues in Geographic Information Systems 3c-0l-3cr

Prerequisite: GEOG 316 or 419

Uses project-based approach to develop and maintain a geographic information system (GIS). Designs and implements functional systems through cooperative learning. Covers methods for designing GIS to user specification, data collection, data input, project management, and system documentation. (Also offered as RGPL 420; may not be taken for duplicate credit.) (Offered as GEOG 417 before 2016-17.)

GEOG 421 Enterprise GIS Management 3c-0l-3cr

Prerequisite: GEOG 420 or instructor permission

Principles and methods for creating, operating, maintaining, and managing data for multiuser geospatial information systems are studied. Each student will customize, document, and operate a multiuser geographic information system of his or her design. (Also offered as RGPL 421; may not be taken for duplicate credit.)

GEOG 425 Global Positioning Systems (GPS) Concepts and Techniques 3c-0l-3cr

Prerequisite: 60cr completed or instructor permission

Provides knowledge of the theoretical basis and practical applications of global positioning systems (GPS). Students gain hands-on experience using GPS receivers and GPS observables, as well as the ability to determine point and relative position fixes from pseudorange and carrier phase measurements. Students are exposed to industry-standard GPS hardware and software, as well as appropriate techniques for processing GPS data to achieve necessary levels of horizontal and vertical positional accuracy. Integration of GPS and geographic information systems (GIS) will also be discussed.

GEOG 435 Geography of Energy 3c-0l-3cr

Covers patterns and problems of energy production and consumption in human societies. Descriptions of what, where, and how much are combined with issues such as technological change, conservation, allocation, environmental impacts, and economic development. Specific topics include global history and trends of energy development, pricing systems, types of energy, locations of production areas, and the energy status of the United States.

GEOG 440 Conservation: Environmental Analysis 3c-0l-3cr

Problems of exploitation and utilization of regional resources such as soils, minerals, forests, and wildlife are considered in relation to population growth and regional planning and development. (Also offered as RGPL 440; may not be taken for duplicate credit.)

GEOG 444 Energy Development and Compliance I 3c-0l-3cr

Prerequisite: GEOG 435 or instructor permission

Reviews and characterizes energy resources found in northern Appalachia and the logic and techniques used to identify, quantify, and regulate their development and extraction. Focuses in particular on the spatial dimensions of shale gas, coal, and wind as major energy sources in northern Appalachia and deals with topics such as exploration, environmental and cultural compliance, logistics, production analysis, and infrastructure maintenance.

GEOG 445 Energy Development and Compliance II 3c-0l-3cr

Prerequisites: GEOG 316, 335, 444; or instructor permission

Reviews and characterizes the spatial representation and analysis techniques used by public, private, and nonprofit entities engaged in the energy industries. Focuses in particular on the implementation of energy resource applications such as exploration and development, environmental and cultural compliance, logistics, production analysis, and infrastructure maintenance.

GEOG 462 Planning Policy, Implementation, and Administration 3c-0l-3cr

Prerequisite: RGPL 350

Focuses on the planning and implementation of policies to manage the location, timing, type, and intensity of land development. Explores the multi-step process from community plan to project completion. Exposes students to the public environment in which community plans are developed and implemented and walks them through the real-world problems of identifying projects, building agency and interagency consensus, finding funding, putting together a project plan, project management, personnel, and budget to project completion. (Also offered as RPGL 462; may not be taken for duplicate credit.)

GEOG 464 Land Use Policy 3c-0l-3cr

An introduction and an overview of land use issues at the regional, state, and federal levels. Emphasizes the evolution of contemporary policy strategies, constitutional issues, and regional controversies involved in the regulation of metropolitan growth, central city decline, and management of public lands.

GEOG 481 Special Topics 3c-0l-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students. (May also be offered as RGPL 481; may not be taken for duplicate credit under same title.)

GEOG 482 Independent Study **var-1-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

GEOG 484 Field Studies in Geography and Social Studies **var-1-3cr**

Prerequisite: Instructor permission
Immerses the student in a regional environment. Helps the student to see critically and to interpret a cultural landscape. The experience is predominantly off campus. Using a combination of structured field exercises, culturally specific readings, primary and secondary data, and standard geographic field techniques, the course strives to develop a deeper affective and cognitive understanding of a cultural region. May be repeated under a different study area title.

GEOG 493 Internship **var-3-12cr**

Professional learning experience with emphasis on application of academic background. Open to majors and minors in geography with a total of 60cr and 15cr in the major. See internship supervisor for additional information.

GEOG 499 Independent Study **var-3-6cr**

Independent research and study under faculty direction. Interested students should approach department chairperson for information.

GEOS: Geoscience
Department of Geoscience
College of Natural Sciences and Mathematics

GEOS 101 The Dynamic Earth **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
Examines the constant changes that affect the rocky surface of our planet. From volcanic eruptions and catastrophic earthquakes to the slow drift of continents and passage of ice ages, earth processes have shaped the history of life and altered the development of human civilization.

GEOS 102 The Dynamic Earth Lab **0c-2l-1cr**

Prerequisite: No geoscience majors/minors
Corequisite: Enrollment in GEOS 102 requires corequisite or previous enrollment in GEOS 101
Introduces the techniques geologists use to study the earth and reconstruct its past. Labs cover minerals, rocks, map interpretation, and fossil identification and may include field trips during the scheduled lab period.

GEOS 103 Oceans and Atmospheres **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
The earth's oceans and atmosphere play a crucial role in determining the pace and extent of changes occurring to our global environment. Examines the composition and character of these components and their interaction with other major components of the earth system.

GEOS 104 Oceans and Atmospheres Lab **0c-2l-1cr**

Prerequisite: No geoscience majors/minors
Corequisite: Enrollment in GEOS 104 requires corequisite or previous enrollment in GEOS 103
Introduces the techniques oceanographers and meteorologists use to study the earth's oceans and atmospheres and reconstruct their evolution. Labs cover seawater processes, oceanic circulation, marine life, atmospheric structure, and weather.

GEOS 105 Exploring the Universe **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
Examines the history of time; the reasons for the seasons; the characteristics of the planets, moons, stars, and galaxies; and the history and future of space exploration.

GEOS 106 Exploring the Universe Lab **0c-2l-1cr**

Prerequisite: No geoscience majors/minors
Corequisite: Enrollment in GEOS 106 requires corequisite or previous enrollment in GEOS 105
Introduces the techniques astronomers use to study the nature and motions of objects in the sky, including the sun, moon, planets, and stars. Includes two observations held at night.

GEOS 119 Geology of Energy Resources **3c-0l-3cr**

Examines the geological environments that create energy resources. Compares patterns of energy development globally and nationally with particular emphasis placed on the development of Pennsylvania's energy resources. Studies relationships of environmental impacts to current levels of energy use, both in terms of climate and water. Culminates with a look at factors that affect future energy demand in terms of population growth and standard of living.

GEOS 150 Geology of National Parks **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
Explores geological processes and earth history using the classic rock formations of America's national parks. Includes national parks such as Arches, Bryce Canyon, Carlsbad Caverns, Grand Canyon, Great Smokies, Mammoth Cave, Shenandoah, Yellowstone, Yosemite, Zion, and others.

GEOS 151 The Age of Dinosaurs **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
A thorough introduction to dinosaurs and the world they inhabited. Topics include the most current theories regarding dinosaur biology (behavior, metabolism, evolution), ecology (greenhouse climate, associated fauna and flora), and extinction (asteroid impact, volcanism, climate change).

GEOS 152 Physical Resources of the Earth **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
An introduction to mineral, energy, and water resources of the earth; genesis of ore depositions; exploration, exploitation, and utilization of resources; impact of exploitation of resources on the environment and on humankind.

GEOS 154 Human Exploration of Space **3c-0l-3cr**

Prerequisite: No geoscience majors/minors
Covers the history, technical considerations, and scientific and social issues of the exploration of the planets and smaller objects of the solar system. Early rocketry, the race to the Moon, and past robotic missions provide a perspective to consider current and future science missions and human settlement beyond earth. Includes field observations and activities that may occur on evenings and weekends.

GEOS 201 Foundations of Geology **3c-3l-4cr**

Prerequisite: Geoscience majors/minors, social studies education majors/minors, anthropology, geography, and regional planning majors, or instructor permission
An introduction to the geological sciences, including the study of the earth's interior; plate tectonics; minerals and crystallography; igneous, sedimentary, and metamorphic rocks and their cycling; geologic time; crustal deformation; and earthquakes. Laboratory exercises will emphasize hands-on learning of basic geology skills including mineral and rock identification, understanding the geometry of subsurface geologic structures, and topographic and geologic map reading.

GEOS 202 Quantitative Methods in the Geoscience **2c-0l-2cr**

Prerequisites: Geoscience or earth and space science education majors/minors only, or instructor permission; must be taken after or concurrently with GEOS 201
A quantitative introduction to the geological sciences, including the study of the earth's interior; plate tectonics; minerals and crystallography; igneous, sedimentary, and metamorphic rocks and their cycling; geologic time; crustal deformation; and earthquakes. Introduces students to foundational mathematical skills and techniques used in the geosciences.

GEOS 203 Surficial Processes 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 201 Introduces students to the geological processes that shape the earth’s surface, from uplift and erosion of mountains to the transport of sediment and subsequent formation of sedimentary rocks. Focuses on the interaction of underlying tectonic forces with the natural cycles of the earth’s atmosphere and hydrosphere and the subsequent evolution of both landscape and surface deposits.	GEOS 312 Hydrogeology 3c-3l-4cr Prerequisites: Grades of “C” or better in GEOS 201 and 202; MATH 121 or 125 or instructor permission. An overview of groundwater geology, including flow equations, aquifer flow equation, aquifer parameter testing, groundwater sampling techniques, and remediation of groundwater pollution. Labs emphasize graphical and analytical solutions as well as computer modeling of groundwater flow systems.
GEOS 204 Historical Geology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 201 An introduction to the historical development of geology as a scientific discipline and an overview of the methods used by geologists to reconstruct the Earth’s past history. Studies the rock and fossil record in lecture, lab, and field outcrops to discover how our planet formed, how plate tectonic activity shaped ocean basins and continents, how geologic processes created economic resources, and how the history of life is recorded by ancient rock deposits. Includes required field trips on weekends. (Offered as GEOS 351 before 2015-16.)	GEOS 323 Geophysics 3c-3l-4cr Prerequisites: PHYS 111, MATH 121, grade of “C” or better in GEOS 201 An introduction to physics of the surface and interior of the solid earth, including earthquakes, propagation of earthquake waves, gravity field and interior structure, magnetic field and magnetic reversals, heat flow, geodesy, and tides. Techniques used for applied geophysical surveys are also examined.
GEOS 301 Mineralogy 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 201 An introduction to crystallography, crystal chemistry, physical properties, optical properties, and phase equilibria of minerals pertinent to geology and economic resources. Laboratory exercises focus on mineral identification and interpretation as well as analytical techniques such as x-ray diffractometry and optical microscopy	GEOS 324 Geology of Oil and Gas 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 203 An in-depth exploration of the geological processes that create oil and gas resources in sedimentary rocks. Students also learn specific techniques used in the oil and gas industry for locating and extracting oil and gas reserves and study the environmental impacts caused by their development. Students also gain an understanding of the limited nature of fossil fuels.
GEOS 302 Structural Geology 3c-3l-4cr Prerequisites: Grades of “C” or better in GEOS 201 and 202 A study of the geometry, kinematics, and dynamics of the primary structures of the earth’s crust. Focuses on the geometric relations between geologic contacts and surface topography, the description of primary structures such as foliations, lineations, folds and fractures, the constraints on crustal motions, and the relation between stress and strain. Students are introduced to the tools of rock mechanics and spherical geometry. The laboratory includes extensive work with geologic maps and profiles, the Brunton compass, and orthographic and stereographic projections. Includes field trips that may occur on weekends.	GEOS 341 Planetary Geology 3c-3l-4cr Corequisites: MATH 121, PHYS 111 or instructor permission Materials, motions, and evolution of the solar system, with an emphasis on observational methods, mechanics, spatial relationships, geology, and origin of the solar system.
GEOS 303 Field Geology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 201 Principles and techniques of field geology with an emphasis on developing field skills using a Brunton compass, topographic maps, Jacobs staff, stereographic projections, field computers, and the global positioning system. Field projects involve techniques of field note taking, measuring and describing stratigraphic sections, bedrock mapping and analysis, environmental assessment, and construction of geologic maps and structure sections. Includes field trips that may occur on weekends.	GEOS 342 Stellar Astronomy 3c-3l-4cr Corerequisites: MATH 121, PHYS 111 or instructor permission Evolution and nature of objects in the universe, including the Sun, stars, and galaxies. A study of methods for gathering astronomical data on motion, distance, and composition.
GEOS 310 Environmental Geology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 203 The study of human interactions with the earth from a geological perspective. An emphasis is placed on the scientific concepts necessary to understand these interactions, including groundwater flow, soil formation and destruction, waste disposal, geologic hazards, stream hydrology, climate change, and natural resources. Contemporary environmental issues are explored through primary scientific literature and news media. Includes field trips that may occur on weekends.	GEOS 345 Igneous and Metamorphic Petrology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 301 Introduces the origins of metamorphic rocks in the context of plate tectonic activity, emphasizing melting and crystallization processes as well as metamorphic reactions. Laboratory exercises focus on rock identification and interpretation on hand sample and petrographic microscopy. Includes field trips that may occur on weekends.
GEOS 311 Geochemistry 3c-3l-4cr Prerequisites: CHEM 111, MATH 121, grade of “C” or better in GEOS 201 An introduction to low-temperature chemistry of the earth’s surface and near-surface; includes discussions of chemical activity, solution chemistry, organic geochemistry, trace elements, stable and radiogenic isotope geochemistry, and the chemistry of natural waters.	GEOS 352 Stratigraphy 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 203 An introduction to the concepts and methods applied in defining and establishing the spatial and temporal relationships of stratigraphic units—the material packages of sediment/rock and the intervals of time that are derived from them. Includes field trips that may occur on weekends.
	GEOS 353 Paleontology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 201 An introduction to the study of prehistoric life, the process and products of organic evolution, and the utility of fossils as tools for solving geological and paleobiological problems. Includes field trips that may occur on weekends.
	GEOS 354 Geomorphology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 203 A study of the origin of the earth’s landforms, including relationship of geologic structure to landform types and role of geomorphic processes in landscape development.
	GEOS 355 Sedimentology 3c-3l-4cr Prerequisite: Grade of “C” or better in GEOS 301 A study of sediments and sedimentary rocks with emphasis on reconstruction of their origin, specifically depositional and post-burial history, from properties observed in outcrops, hand-specimens, and thin sections.

- GEOS 356 Coastal Processes and Geology** **3c-3l-4cr**
Prerequisites: GEOS 203, geoscience majors/minors, and earth and space science education majors/minors, or instructor permission
 The study of the origin and evolution of coastal environments from a geological perspective. Emphasis is placed on the quantitative investigation of the dominant processes (waves, tides, and currents) that create and modify these environments, as well as the role of human-induced change. Contemporary issues in coastal geology are explored through primary scientific literature, news media, and laboratory exercises. Includes field trips that may occur on weekends.
- GEOS 362 Plate Tectonics** **3c-3l-4cr**
Prerequisite: Grade of "C" or better in GEOS 201
 Introduction to formal theory of plate tectonics. Topics include magnetic anomalies, first motion studies, thermal structures of the plates, kinematics, crustal generation, sea floor spreading, collision, and subduction deformation.
- GEOS 363 Volcanology** **3c-3l-4cr**
Prerequisite: Grade of "C" or better in GEOS 201
 Introduces volcanoes, volcanic eruption styles, and deposits in subaerial and submarine environments. Students assess risks and hazards associated with living near active volcanoes and discuss the cultural influences of volcanoes around the world throughout human history. Study of different types of volcanic eruptions through historical and pre-historical case studies. Laboratory exercises focus on rock identification and interpretation, fluid dynamics experiments, and learning laboratory and field skills of volcanologists that allow the determination of eruption dynamics.
- GEOS 370 Oceanography** **3c-3l-4cr**
Prerequisite: Grade of "C" or better in GEOS 201
 An introduction to physical, chemical, geological, and biological nature of the ocean: bathymetry, submarine geology, and sedimentary deposits. Includes field trip(s) that may occur on weekend(s).
- GEOS 371 Meteorology** **2c-3l-3cr**
Prerequisite: Grade of "C" or better in GEOS 201
 An introduction to meteorological sciences; composition and structure of the atmosphere; radiation principles; elementary thermodynamics and heat balance.
- GEOS 404 Newfoundland Field Workshop** **var-3cr**
Prerequisites: GEOS 403; instructor permission and valid passport required
 A field course designed to utilize the exceptional and diverse geologic features of Newfoundland for instruction of departmental majors and minors in the tectonic analysis utilizing sedimentologic, stratigraphic, and paleontologic observations. (Three weeks, taught in the summer only.)
- GEOS 405 American Southwest Seminar** **1c-0l-1cr**
Prerequisites: Grades of "C" or better in GEOS 201 and 202; instructor permission required
 A seminar introduction to the geology of the American Southwest. Includes examination of Colorado Plateau stratigraphy, Basin and Range tectonism, and volcanic events in the eastern Sierra Nevada. Prepares students specifically for GEOS 406.
- GEOS 406 American Southwest Field Workshop** **var-3cr**
Prerequisites: GEOS 405; instructor permission required
 A field study of the major geologic features and relationships exposed in the American Southwest, including the Colorado Plateau, the Rio Grande Rift, Death Valley, and parts of the eastern Sierra Nevada in California. (Three weeks, taught in the summer only.)
- GEOS 407 Carbonate Geology Seminar** **1c-0l-1cr**
Prerequisites: Grades of "C" or better in GEOS 201 and 202; instructor permission required
 A seminar introduction to the geological environment and history of the carbonate rocks and sediments found in Florida. Includes instruction in the techniques of field analysis and geologic interpretation. Prepares students specifically for GEOS 408.
- GEOS 408 Carbonate Geology Field Workshop** **var-3cr**
Prerequisites: GEOS 407; instructor permission
 Two to three weeks of field study in Florida Keys and at Andros Island, Bahamas. Conducted from base camps in Florida Keys and at Forfar Biological Field Station (Bahamas) and consists of both land and marine studies of the different carbonate environments in the Keys, Florida Bay, and along the Atlantic reef tract. Valid passport and basic swimming skills required.
- GEOS 409 Geology of Shale Gas—Field Workshop** **2c-3l-3cr**
Prerequisite: GEOS 119
 Intensive laboratory and field-based investigations of the geology of shale gas energy formation, development and extraction. Explores the geological formation and history of natural gas found in deep shale deposits and investigates technology used to extract these from the subsurface and how economic, environmental, and political factors influence the development of shale gas resources. Includes travel to field-based locations and rig-floor environments.
- GEOS 470 Research Methods in the Geosciences** **2c-0l-2cr**
Prerequisites: GEOS 202; 75cr or instructor permission
 For students enrolled in all majors within the Geoscience Department. Students learn the methods of research in the geosciences by working on a project of their choosing. Students define a problem, propose several hypotheses, collect data, and perform a quantitative analysis to test their hypotheses and propose a solution. Final results are submitted in professional manuscript form. As preparation, students examine various geoscience problems and data sets through the semester. Cannot be taken subsequent to GEOS 480.
- GEOS 480 Geoscience Seminar** **2c-0l-2cr**
Prerequisites: GEOS 470, senior standing
 For seniors majoring in some aspect of geoscience. The seminar (1) provides an opportunity to prepare, formally present, and defend a scientific paper based either on his/her own research or on a topic chosen with the approval of instructor and (2) provides opportunity to discuss topics presented by other students, faculty, or guests.
- GEOS 481 Special Topics** **var-1-3cr**
Prerequisite: As appropriate to course content
 The department's intention is to use this course to schedule extended field trips and for teaching special courses that utilize the specialties of the Geoscience faculty.
- GEOS 482 Independent Study** **var-1-3cr**
Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
 Independent study provides an opportunity to use library, laboratory, or field research in an area that is of interest under the supervision of a designated faculty member. Approval is based on academic appropriateness and availability of resources.
- GEOS 490 Field Studies in Geology** **var-1-4cr**
Prerequisites: GEOS 301; instructor permission
 Field-based geologic research in a variety of locations across the United States and the world. Through hands-on application, students learn how to formulate a field hypothesis, use field equipment to collect geological observations and samples, keep a field notebook, and create visual depictions of field data in the form of maps or cross-sections.
- GEOS 492 Soils and Soil Geochemistry** **2c-3l-3cr**
Prerequisite: Grade of "C" or better in GEOS 201
 Introduces the ways in which archaeologists and geoscientists define, recognize, examine, and interpret soils in both the field and the laboratory. Examines (1) how the interactions of landform, topography, climate, and biota result in patterns of soil development and the distribution of soils that we observe within the landscape; (2) the significance of soils to other disciplines, including archaeology, Quaternary geology, and geoenvironmental science; and (3) how the physical, chemical, and biological properties of soils are influenced by human activities both past and present. Includes field trips that may occur on weekends. (Offered as GEOS 313 before 2016-17.) (Also offered as ANTH 492; may not be taken for duplicate credit.)

GEOS 493 Geoscience Internship **var-1-12cr**
 Summer or semester work experience with cooperating firms or agencies. May be scheduled only after consultation with advisor and chairperson. Requirements include up to three on-site consultations, depending on credits and location's site; completion of up to three oral progress reports; and submission of a detailed work diary. Restricted to junior and senior department majors; only 3cr may be applied toward major.

GERN: Gerontology
Department of Nursing and Allied Health Professions
College of Health and Human Services

GERN 493 Internship **3cr**
Prerequisites: Senior standing, all required courses
 Supervised experience in public or private agency that serves aging clients.

GRMN: German
Department of Foreign Languages
College of Humanities and Social Sciences

GRMN 101 Elementary German I **4c-0l-4cr**
 For beginning students. Introduction to the German language emphasizing communication through reading, writing, speaking, and listening. Focus on pronunciation and basic grammatical concepts to enable students to communicate in the present tense in a range of situations. They will be able to negotiate a limited number of personal needs and handle basic social interactions related to their daily lives. They become acquainted with a variety of cultural aspects of German-speaking countries. Attendance is required. May not register for or take a D/F repeat in GRMN 101 when credit has already been received for a higher-numbered German course.

GRMN 102 Elementary German II **4c-0l-4cr**
Prerequisite: GRMN 101 or equivalent
 A continuation of GRMN 101. Emphasizing communication through reading, writing, speaking, and listening. Focus on pronunciation and expansion of grammatical concepts to enable students to communicate in present, past, and future tenses in a variety of situations. Students will be able to negotiate a limited number of personal needs, handle a range of interactions related to their daily lives, and manage simple social transactions. They expand their cultural knowledge of German-speaking countries. Attendance is required. Liberal Studies credit is given. May not register for or take a D/F repeat in GRMN 102 when credit has already been received for a higher-numbered German course.

GRMN 201 Intermediate German **4c-0l-4cr**
Prerequisite: GRMN 102 or equivalent
 A continuation of GRMN 102. Emphasizing communication through reading, writing, speaking, and listening. Focus on pronunciation and expansion of grammatical concepts to enable students to communicate in present, past, and future tenses in a variety of situations. Students will be able to negotiate an increasing number of personal needs, handle a range of interactions related to their daily lives, and manage simple social situations and transactions. They expand their cultural knowledge of German-speaking countries. Attendance is required. Liberal Studies credit is given. May not register for or take a D/F repeat in GRMN 201 when credit has already been received for a higher-numbered German course.

GRMN 220 Intermediate German Conversation **3c-0l-3cr**
Prerequisite: GRMN 201 or equivalent, or instructor permission
 Intensive work on oral communication skills with specific emphasis on spontaneous interpersonal speaking, discourse strategies, vocabulary building, and pronunciation. Required for all minors.

GRMN 221 Conversation III **2c-0l-2cr**
 Two-hours-weekly conversation practice in small groups emphasizing the use of greetings, idiomatic expressions, and communication skills to improve vocabulary and pronunciation.

GRMN 230 Intermediate German Composition and Grammar **3c-0l-3cr**
Prerequisite: GRMN 201 or equivalent
 Intensive practice in written expression and communication in German together with a grammar review. Intermediate-level course with the goal of fostering writing in German for a variety of practical purposes. Review and expansion of specific grammar points are integrated into each unit. Taught in German.

GRMN 281 Special Topics **var-1-3cr**
Prerequisite: As appropriate to course content
 Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

GRMN 372 Childhood Enchantment: The Fairy Tale in German Culture and Literature **3c-0l-3cr**
Prerequisite: GRMN 201 or instructor permission
 Analyzes the role fairy tales have played in German culture and literature over time. Emphasizes the complex reflection of socio-political processes and realities in folk tales and literary fairy tales ("Kunstmärchen"), as well as the use of fairy tale motifs in other literary genres, film, the arts, music, advertising, and everyday life. Topics to be discussed may include, but are not limited to, gender roles, family relationships, the motif of the quest, the depiction of heroes and heroines, the conflict between good and evil, crime and punishment, the idea of justice, altruism versus egotism, the fairy tale and politics, etc. Taught in German.

GRMN 481 Special Topic **var-1-3cr**
Prerequisite: As appropriate to course content
 Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students. Designed to meet the special needs of a student group.

GRMN 482 Independent Study **var-1-3cr**
Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
 Provides an opportunity to engage in an in-depth analysis of some topic dealing with the German language and culture through consultation with a faculty member.

HBUS: Honors Business
Eberly College of Business and Information Technology

HBUS 101 Contemporary Business Issues **3c-0l-3cr**
Prerequisite: Admission to College of Business Honors Program
 An honors-level course in the Eberly College of Business and Information Technology enables eligible students to participate in advanced study in the freshman year. Provides the foundation of the integrative nature of the college's majors by including seminar meetings discussing contemporary business issues with local, regional, and national alumni business leaders; research mentoring with college faculty and businesspeople; opportunities to provide service to the college, university, and the community; and the beginning of an electronic portfolio. Serves as the introduction to the college's honors program that also includes a sophomore cluster, an honors junior block, and an honors senior capstone course.

HIST: History
Department of History
College of Humanities and Social Sciences

HIST 106 Samurai and Gongfu Heroes: Masculinity in East Asia **3c-0l-3cr**
 Explores what it means to be a man, from the haohan of China to the Men of High Purpose of Japan and beyond. Analyses stories, films, and official histories that have encouraged Chinese and Japanese people to emulate the great heroes of the past and how these people and their stories have been

re-used in modern Asia. (Also offered as ASIA 106; may not be taken for duplicate credit.)

HIST 196 Explorations in US History **3c-0l-3cr**

Interprets and analyzes the development of US history through a chronological survey of a historical era or a topical theme central to US history. Examines, where appropriate, the intersection of race and ethnicity, gender, and class. Emphasizes the recognition of historical patterns, the interconnectedness of historical events, and the incorporation of various subfields in the discipline of history. Successful completion of HIST 196 fulfills the Liberal Studies History requirement. HIST 197 and 198 also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

HIST 197 Explorations in European History **3c-0l-3cr**

Interprets and analyzes the development of European history through a chronological survey of a historical era or a topical theme central to European history. Examines, where appropriate, the intersection of race and ethnicity, gender, and class. Emphasizes the recognition of historical patterns, the interconnectedness of historical events, and the incorporation of various subfields in the discipline of history. Successful completion of 197 fulfills the Liberal Studies History requirement. HIST 196 and 198 also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

HIST 198 Explorations in Global History **3c-0l-3cr**

Interprets and analyzes the development of global history through a chronological survey of a historical era or a topical theme central to global history. Examines, where appropriate, the intersection of race and ethnicity, gender, and class. Emphasizes the recognition of historical patterns, the interconnectedness of historical events, and the incorporation of various subfields in the discipline of history. Successful completion of HIST 198 fulfills the Liberal Studies History requirement. HIST 196 and 197 also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

HIST 201 Western Civilization before 1600 **3c-0l-3cr**

Prerequisite: 3cr of college history, or current major in any of the following: history, history/pre-law, middle-level education grades 4-8/social studies specialization, or secondary social studies

A survey course presenting in various forms the origin and development of major political, social, religious, and intellectual institutions in Western civilization to approximately 1600. For history majors or by instructor's permission.

HIST 202 Western Civilization since 1600 **3c-0l-3cr**

Prerequisite: 3cr of college history, or current major in any of the following: history, history/pre-law, middle-level education grades 4-8/social studies specialization, or secondary social studies

Development of Western civilization from the expansion of Europe to the present, including political, diplomatic, economic, social, and cultural areas. Introduces issues and interpretations encountered in upper-level courses. For history majors or by instructor's permission.

HIST 204 United States History to 1877 **3c-0l-3cr**

Prerequisite: 3cr of college history, or current major in any of the following: history, history/pre-law, middle-level education grades 4-8/social studies specialization, or secondary social studies

An introduction to United States history from the Colonial period through Reconstruction, covering such main currents as the founding of American society, the American Revolution, the making of the Constitution, the market revolution, westward expansion, slavery, the Civil War, and Reconstruction.

HIST 205 United States History since 1877 **3c-0l-3cr**

Prerequisite: 3cr of college history, or current major in any of the following: history, history/pre-law, middle-level education grades 4-8/social studies specialization, or secondary social studies

An introduction to United States history, 1877 to the present, covering such main currents as industrialization, Progressivism, World War I, the Great Depression and New Deal, World War II and the Cold War, the 1960s, the Vietnam War, and post-Vietnam political, social, and economic developments.

HIST 206 The History of East Asia **3c-0l-3cr**

History of China and Japan from ancient times, Buddhism, medieval Japan, Chinese communism, industrialization, and the modern Pacific Rim. Some consideration of peripheral Asia.

HIST 207 The History of the Middle East **3c-0l-3cr**

History of the Middle East from the late Byzantine and Sassanid period, Islam, medieval Islamic civilization and the rise of early modern dynasties, European imperialism, the origins of modern nation states, and the contemporary Middle East.

HIST 251 United States Military History **3c-0l-3cr**

Prerequisite: Not applicable toward the history major

A survey of the history and transformation of the American military from the Colonial period to the present time. American military history is analyzed within the context of the nation's political, social, economic, and cultural development. Central themes include war making, civil-military relations, and military professionalism.

HIST 295 Introduction to Historical Studies **3c-0l-3cr**

Prerequisite: History, history/pre-law, or social studies education majors
First of a two-course sequence. Introduces students to the study of history, analysis of primary and secondary sources, historical interpretation and historical writing. The student is encouraged to become a better historian and to identify with the historical profession.

HIST 301 History of Ancient Greece **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
Analyzes major political, social, and economic developments in ancient Greek civilization from Bronze Age to death of Alexander.

HIST 302 History of Ancient Rome **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
Traces Roman history from early Republic down to fall of Empire. Roman political theory is particularly emphasized.

HIST 303 Medieval Europe I, 400-1000 **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
History of early Medieval Europe, from decline of Rome to beginnings of High Middle Ages; emphasis on political, social, economic, religious, and intellectual developments.

HIST 304 Medieval Europe II, 1000-1300 **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
History of late Medieval Europe, from High Middle Ages to Renaissance period; emphasis on political, social, economic, religious, and intellectual developments.

HIST 305 Renaissance and Reformation **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
History of Europe from approximately 1250; rise of commercial city, kings, and pressures on Christian Church to 1600. Some consideration of technology and voyages.

HIST 306 Early Modern Europe **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
Greatness of France under Louis XIV; Sweden; Thirty Years' War. Emergence of modern society; French Revolution.

HIST 307 History of Europe: 1815-1914 **3c-0l-3cr**

Prerequisites: Sophomore standing, 3cr of college history
The study of Europe in 19th century, with emphasis on the emergence of major thought patterns, Romanticism, Nationalism, Socialism, and Positivism.

- HIST 310 Making Italy Modern** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Surveys the principal themes in the transformation of Italian cultural, social, economic, and political structures since the 19th century. Topics include Italian unification; the growth of national culture; the development of a modern state, economy, and society; Italy's role in the Mediterranean; Italian emigration throughout the world; the impact of modernity; Fascism and anti-Fascism; and Italy in the post-World War II era.
- HIST 311 Rise and Fall of Hitler's Empire** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 An in-depth study of Hitler and the Nazi order; offers an analysis of 19th-century origins of Nazi ideology and intensively analyzes domestic and foreign totalitarian policy (1920-1945), including Holocaust, Resistance, and the postwar Nuremberg Trials.
- HIST 312 Europe, 1914-1945: The Age of Dictators and Imperiled Democracies** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Surveys the principal themes in the transformation of Europe from 1914 to 1945. Topics include World War I and the Paris Peace settlement; developments in conservatism, liberalism, and socialism; colonial empires; the emergence of communism, fascism, and Nazism; artistic, musical, and literary movements between the two World Wars; the Great Depression and responses to it; anti-Semitism and the Shoah; the Spanish Civil War, appeasement, and World War II; and the seeds of decolonization and the Cold War.
- HIST 313 Europe Since 1945: Division, Revolution, and Unity** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Surveys the principal themes in European history since 1945. Topics include postwar reconstruction, the origins of the Cold War in Europe, the long years of economic growth followed by stagnation, decolonization of the British and French empires, the events of 1968 and their consequences, the experience of communism in the East Bloc, the revolutions of 1989, and progress toward European integration.
- HIST 320 History of England to 1688** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 A survey of the growth of the English nation, with emphasis on political, social, and economic developments leading to 17th-century conflict between Crown and Parliament.
- HIST 322 French Revolution and Napoleon** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Brief sketch of Old Regime, concentration on Revolution and Empire, with emphasis on politics, social structure, diplomacy, and economics.
- HIST 323 France, 1815 to the Present** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 A survey of French history from the end of the Napoleonic era to the present. Pays special attention to the revolutionary tradition in politics, changes in the lives of workers and peasants, the French experience in the two world wars, and recent social and political trends.
- HIST 326 History of Russia** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 A general survey of Russian history, culture, and institutions. Special consideration given to the study of historical forces formative of Revolution of 1917.
- HIST 327 Soviet Union and Contemporary Russia** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Analyzes the period from 1855 to the present, including the attempts at modernization by Imperial Russia, the creation of the Soviet Union and further modernization, and the collapse of the Soviet Union.
- HIST 329 The History of the Byzantine Empire** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 An introduction to early Byzantine civilization and history, A.D. 400-1300. Traces the transformation of the ancient world and the emergence of a distinctly medieval Byzantine civilization.
- HIST 330 History of the Islamic Civilization** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 An approach to learning about a non-Western culture: Muhammad, Arabs, and Muslims as creators of a great civilization from rise of Islam to 1800; emphasis on cultural institutions of Islam and their interrelationships within Middle East.
- HIST 331 Modern Middle East** 3c-0l-3cr
Prerequisites: Sophomore standing and 3cr of college history
 A survey of changes that have taken place in Middle East and in Islam since 18th century and of contemporary problems in that region.
- HIST 332 History of Early China** 3c-0l-3cr
Prerequisites: Sophomore standing and 3cr of college history
 China from the dawn of time to the Tang Dynasty. Focuses on the creation of the intellectual and political systems that have dominated China and East Asia down to the present. Looks in depth at the origins of Chinese philosophy and the imperial system.
- HIST 334 History of Modern China** 3c-0l-3cr
Prerequisites: Sophomore standing and 3cr of college history
 The history of China from the late Ming to the present. The Late Imperial political, economic, and social systems and the problems they faced in the 19th century. Reforming China from the Self-Strengthening to Mao. Revolutionary society and its discontents. The reform era and China today.
- HIST 337 History of Modern Japan** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 The history of Japan from the beginning of the Tokugawa period to the present. Japan's early modern political, economic, and social systems; its transformation in the Meiji era; and the Japanese people's struggles and successes in the 20th century.
- HIST 338 The History of Iran** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Focuses on aspects of Iranian history from the Achaemenid period until the present that are significant for the formation of modern Iranian identity. Uses primary sources, secondary readings, literature, and film to analyze the development of Iranian identity as well as modern perceptions of Iran. Emphasis on ancient Iranian culture and religion, the story of Iranian wars with the Greeks and Romans, how Iran became Muslim, and the development of contemporary Iranian religion and politics.
- HIST 339 Jihad and the Origins of Islamist Movements in the Middle East** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 Discusses the concept of "jihad" in Islamic history: its origins, development, and historical deployment by groups within the Muslim community. Analyzes the history and origins of groups such as al-Qaeda, the Taliban, and ISIS and considers whether these groups are "medieval" or actually modern products of globalization. (Also offered as PLSC 339; may not be taken for duplicate credit.)
- HIST 340 Colonial America** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 A survey of original 13 states from their inception as colonies within the British empire to 1763, the eve of Independence. Attention is given to their political development; economic position within the empire; relations with Indians; and evolution of social, educational, and religious life.
- HIST 341 American Revolution** 3c-0l-3cr
Prerequisites: Sophomore standing, 3cr of college history
 An examination of Whig-Tory participants of American Revolution. Examines events from 1763 to 1783. Changing interpretations of the causes and effects of the revolution are discussed.

HIST 342 The Early Republic 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
A survey of United States history from 1783 to 1850, with special attention on constitutional, political, economic, and social trends.

HIST 343 Civil War and Reconstruction 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
The study of the failure of American democracy to cope with issues of mid-19th century, followed by political, economic, military, and social developments during war and reconciliation of North and South.

HIST 345 America in War and Depression, 1914-1945 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
A study of the social, economic, political, and cultural response to war and depression in America. Topics include the World War I, the 1920s, the Depression, the New Deal, and the World War II.

HIST 346 Recent United States History 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Examines the major political, economic, social, and cultural changes in America since 1945, with a focus on their causes, character, and significance; also explores the role of the United States in global relations.

HIST 348 Top Secret America: The Rise and Reach of the National Security State 3c-0l-3cr

Focuses on the historical development of the concept of national security in the US and on the intersection of national and broader international security concerns in the Cold War context. Identifies, for the Cold War era and beyond, diplomatic, military, and intelligence capabilities of governments and explores how individuals and groups conceptualized themselves, and their security. Explores one powerful motivator: fear and how it translated into political actions and citizen involvement in Cold War concepts. HIST 348 and PLSC 348 may be substituted interchangeably for D/F repeats, but may not be used for duplicate credit.

HIST 350 History of Latin America: Colonial Period, 1450-1820 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
A study of life of people, Indian cultures, conquest by Spaniards and Portuguese, government during Colonial Period, and Wars of Independence.

HIST 351 History of Latin America: National Period, 1820-Present 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
A study of the history of nations that have emerged since independence; emphasis on economic, political, cultural, and social developments of these nations, as well as relationships of these nations to others in the hemisphere.

HIST 362 History of American Diplomacy, 1900-present 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Treats primarily our 21st-century involvement in world affairs and domestic debate over that involvement. Special emphasis is on the role of interest groups and increasing power of Executive Department over foreign affairs.

HIST 363 Thought and Culture in Early America 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Selected topics in early American intellectual and cultural growth, with emphasis on Puritanism, Enlightenment, cultural nationalism, and Romantic movement.

HIST 365 History of Black America since Emancipation 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Description and analysis of the role of blacks in the history of the United States since the Civil War; emphasis on key leaders, major organizations, leading movements, and crucial ideologies of blacks in modern America.

HIST 369 Women in America 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
A study of the activities of women from the colonial era to the modern era—evaluating cultural, societal, religious, economic, and political frame-

works. Reviews women's involvement in movements for feminism, social reform, unionism, and the abolition of slavery.

HIST 372 History of the Early American Working Class 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Description and analysis of the nature and significance of the working class of the United States in the 18th and 19th centuries. The work settings and communities of workers are examined, as well as unions such as the National Labor Union and the Knights of Labor.

HIST 373 History of the Modern American Working Class 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Description and analysis of the nature and significance of the working class of the United States in the 21st century. Work settings and strikes are examined and analyzed, as well as unions such as the United Mine Workers and the United Auto Workers and labor leaders including Samuel Gompers, John L. Lewis, and George Meany.

HIST 374 History of Organized Crime 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Studies the relationship between urban, entrepreneurial crime and the evolution of industrial America.

HIST 379 History in the Digital Age 3c-0l-3cr

Prerequisite: History and social studies education/history majors; not applicable toward Social Studies Education requirements; sophomore standing; 3cr of college history
Examines the changes that digital technologies are bringing to the field of history and how historians research, write, present, and teach the past. Students investigate the development of this new media and study the state of digital historical work by scholars, teachers, archivists, museum curators, and popular historians. As they examine this work, students also explore the philosophical and ethical issues raised by efforts to put history online. Finally, students are given an introduction to some of the programs used by historians and the public to create digital history.

HIST 385 People in Nature: An Introduction to Environmental History 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Examines the ways in which human perceptions of nature, human manipulations of nature, and natural constraints on human activities have interacted and changed over time. Drawing material from early modern and modern Europe as well as the United States, this course treats the effects of climate change, industrialization, agricultural crisis, deforestation, and modern conservation and environmentalism through rotating case studies. Examines the following comprehensive questions with each case study: How have climate, soil, biota, and other natural factors shaped human ways of making a living from the land? How have they influenced culture more generally? How has human action, in various times and places, modified natural ecosystems? How do we describe the resulting "hybrid" landscapes? How have different cultures described and analyzed nature?

HIST 391 Film as History 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
Particularly concerned with probing the relationship between cinema and society. History of film is explored and student is given some background in film interpretation and cinematography, the western, science fiction, police films, and great foreign and American detective films.

HIST 394 Introduction to Classical Archaeology 3c-0l-3cr

Prerequisites: Sophomore standing, 3cr of college history
An introduction to the archaeology of the Classical world. A variety of sites, artifacts, and monuments are examined with an emphasis on archaeological problems such as the recording and interpretation of archaeological evidence, the relation between historical and archaeological events, and the use and misuse of ancient texts. Attention is given to developments in theory and methodology and to the history of the discipline of Classical Archaeology from antiquity to the present day.

HIST 395 Introduction to Historical Methods 3c-0l-3cr**Prerequisite:** HIST 295

A colloquium focusing on historiography and historical methods in the context of a specific topic. Students are expected to improve their research and writing skills and their understanding of historiography and methods of historical research. (writing-intensive course)

HIST 420 Introduction to Public History 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

Introduces students to a wide range of activities in which public historians engage. Considers broader conceptual theoretical and practical issues associated with historic preservation, museum studies, oral history, the management of archival and manuscript collections, as well as a variety of other public history activities. Also considers broader conceptual issues associated with the field of public history. None of the Public History courses (HIST 420, 421, 422, or 423) may be counted towards the BSEd—Social Studies Education/History Track. Only one may be counted towards the BA—History or the BA—History/Pre-law Track.

HIST 421 Archival Studies 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

An introduction to the archival profession and its practices. None of the Public History courses (HIST 420, 421, 422, or 423) may be counted towards the BSEd—Social Studies Education/History Track. Only one may be counted towards the BA—History or the BA—History/Pre-law Track.

HIST 422 History Museums and Historic Sites: Theory and Practice 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

An introduction to the history of museums and historic sites. Focuses on the relationship between history and public audiences, on the theory and practice of telling stories through museums, historic sites, and living history. Introduces the tools that public historians use to interpret the past, explores key dilemmas in public interpretation and community collaboration, and examines contemporary models on how to reach audiences in ways that make history resonant and meaningful to them. None of the Public History courses (HIST 420, 421, 422, or 423) may be counted towards the BSEd—Social Studies Education/History Track. Only one may be counted towards the BA—History or the BA—History/Pre-law Track.

HIST 423 Oral History Practice 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

Introduces the practices of collecting and preserving oral histories, as well as the research and public use of oral histories. None of the Public History courses (HIST 420, 421, 422, or 423) may be counted towards the BSEd—Social Studies Education/History Track. Only one may be counted towards the BA—History or the BA—History/Pre-law Track.

HIST 433 China 1300-1800: The Late Imperial Age 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

Examines the cultural and social history of Late Imperial China. Includes elite attempts at creating an orderly Confucian society and also how less powerful groups altered or challenged this vision. Discusses the role of commercialization and commercial culture and China as an Early Modern society. (Titled *Bandits and Poets: The Cultural and Social History of Late Imperial China before 2016-17.*)

HIST 434 Modern China 1800-present 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

China's modern transformation from the crisis of the Late Qing through the various revolutionary governments of the 20th century to the rise of China as a world power. Looks at both Chinese elites' quest for wealth and power and the impact this quest has had on ordinary people. (Titled *History of Modern China: From the Opium Wars to the Present before 2016-17.*)

HIST 436 Japan 1500-1850: Early Modern Japan 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

Examines the cultural and social history of Early Modern Japan, including both Sengoku and the Tokugawa. This includes elite attempts at creating a stratified social order and also how less powerful groups altered or challenged this vision. Discusses the role of commercialization and commercial

culture and Japan as an Early Modern society. (Titled *Geisha and Samurai: The Cultural and Social History of Early Modern Japan before 2016-17.*)

HIST 437 Modern Japan 1850-Present 3c-0l-3cr**Prerequisites:** Sophomore standing, 3cr of college history

Japan's modern transformation from the age of the samurai to the present. Looks at both the Japanese elites' quest for wealth and power in the late 19th and the 20th centuries and the impact this quest has had on ordinary people. (Titled *The History of Modern Japan: From the Floating World to the Present before 2016-17.*)

HIST 475 History of American Constitutionalism 3c-0l-3cr**Prerequisites:** Sophomore standing and 3cr college history

Examines the major themes and problems concerning the constitutional history of the United States from the American Revolution to the end of the Cold War. Among other subjects, explores why and how the United States Constitution was written; how the nature and scope of the powers of Congress, presidency, and judiciary were transformed; how the relationship between the federal government and the states evolved; and how such constitutional amendments as the first and 14th redefined the power of governments, as well as the rights of citizens.

HIST 480 Senior Seminar 3c-0l-3cr

A regimen of research resulting in a written paper. Work on a program selected by the instructor. For history majors or by instructor's permission.

HIST 481 Special Studies in History var-1-3cr**Prerequisites:** As appropriate to course content, sophomore standing, 3cr of college history

Offered each semester in interest areas that are not part of the regular program. Some examples of courses of this type are the Victorian Age, the History of Love, World War II, the Great Depression, the Adams Chronicles, and the History of New York City. May schedule as many of these courses as desired, but two per semester is the usual limit.

HIST 482 Independent Study var-3-6cr

Prerequisites: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost with 12cr in history; a 3.0 GPA in history classes; permission of a faculty member. Approval is based on academic appropriateness and availability of resources.

Involves directed reading or research for qualified students. Experimental projects and personalized learning are encouraged.

HIST 483 Honors Thesis var-3-6cr

Prerequisites: History, history/pre-law, or social studies education/history major; 3.25 cumulative GPA; 3.5 GPA in history courses, departmental permission. Approval is based on academic appropriateness and availability of resources.

A two-semester sequence of research and writing, culminating in an honors thesis. Honors theses are completed individually under the direction of a department professor who specializes in the student's area of interest and are approved by a thesis committee comprising the director and two others, one of whom may come from outside the History Department. May be taken twice for a total of 6cr. Completion of 6cr of HIST 483 substitutes for HIST 480.

HIST 487 Honors Colloquium in History 3c-0l-3cr

Colloquium emphasizing reading, discussion, and writing on an announced historical topic or theme that varies from semester to semester according to the expertise of the faculty member teaching the course. Open to all Cook Honors College students who have completed HNRC 201 and, with instructor permission, to junior and senior history, history/pre-law, or social studies education majors who have at least a 3.5 GPA in History classes.

HIST 493 Internship var-3-12cr

With departmental approval, students are attached to local or national government or private agencies doing directive, bibliographical, archival, or museum work. Advising professor meets with intern regularly and determines what papers or reports are required.

HIST 495 Topics in United States History 3c-0l-3cr

Prerequisites: HIST 395 and junior/senior history, history/pre-law, or social studies education majors or by instructor permission
An upper-division course emphasizing lecture, reading, discussion, and writing on specialized topics relating to historical issues of the United States of America. The theme varies from semester to semester according to the expertise of the faculty member teaching the course. May be repeated. (Offered as HIST 401 before 2014-2015.)

HIST 496 Topics in European History 3c-0l-3cr

Prerequisites: HIST 395 and junior/senior history, history/pre-law, or social studies education majors or by instructor permission
An upper-division course emphasizing lecture, reading, discussion, and writing on specialized topics relating to European historical issues. The theme varies from semester to semester according to the expertise of the faculty member teaching the course. May be repeated. (Offered as HIST 402 before 2014-15.)

HIST 497 Topics in Non-Western History 3c-0l-3cr

Prerequisites: HIST 395 and junior/senior history, history/pre-law, or social studies education majors or by instructor permission
An upper-division course emphasizing lecture, reading, discussion, and writing on specialized topics relating to non-Western historical issues. The theme varies from semester to semester according to the expertise of the faculty member teaching the course. May be repeated (Offered as HIST 403 before 2014-15.)

HIST 498 Topics in Comparative History 3c-0l-3cr

Prerequisites: HIST 395 and junior/senior history, history/pre-law, or social studies education majors or by instructor permission
An upper-division course emphasizing lecture, reading, discussion, and writing on specialized topics relating to comparative historical issues. The theme varies from semester to semester according to the expertise of the faculty member teaching the course. May be repeated. (Offered as HIST 404 before 2014-15.)

HNRC: Honors College
Cook Honors College
Academic Affairs Division

HNRC 101 Honors Core I 5c-0l-5cr

Prerequisites: Freshman status, admission to the Honors College
This first in a series of three required and interrelated courses introduces Honors College students to major works of literature and art; to major ideas in history, philosophy, religious studies, literature, and the fine arts; and to critical thinking skills used in reading, writing, and discussion in an integrated, synthetic, and interactive pedagogical environment. While materials from various periods and disciplines are part of HNRC 101, each instructor has attempted to incorporate some works from a common century to provide students with a common ground for exploring the core questions.

HNRC 102 Honors Core II 5c-0l-5cr

Prerequisites: HNRC 101, freshman status, admission to the Honors College
The second in a series of three required and interrelated courses. Continues the emphases of HNRC 101: (a) introduction to major works of literature and fine arts; (b) introduction to major ideas in history, philosophy, religious studies; and (c) focus on critical thinking skills used in reading, writing, and discussion in an interrelated, synthetic, and interactive pedagogical environment. Although materials come from various periods and disciplines, each instructor has incorporated works from a common century to provide a common ground for exploring core questions. Building on their experiences in HNRC 101, students become more critical and analytical in their reading and response. Further, the ability to synthesize is emphasized based on their previous readings and learning experiences.

HNRC 201 Honors Core III 4c-0l-4cr

Prerequisites: Sophomore status, admission to the Honors College, and successful completion of HNRC 101 and 102 if admitted to the Honors College as a first-year student. Prerequisites for students admitted to the

Honors College as sophomores are ENGL 101 and at least one Liberal Studies course in the humanities or fine arts.

Completes the introduction of Honors College students to major works of literature and art; major ideas in history, philosophy, religious studies, literature, and the fine arts; and critical thinking skills used in reading, writing, and discussion in an integrated and interactive pedagogical environment.

HNRC 202 Honors Core: Sciences 4c-0l-4cr

Prerequisites: HNRC 101, 102, sophomore status, admission to the Honors College
Concerned with science as a way of knowing about the world. Focuses on what scientists have learned about what it means to be human, how humans have been shaped by and, in turn, have influenced their environment, and what use might be made of scientific knowledge. These themes are explored from disciplines in the natural and social sciences.

HNRC 499 Honors Senior Synthesis var-3-6cr

Prerequisites: 3.25 GPA, Honors College good standing or instructor permission, 73 or more credits earned
Concluding cross-disciplinary Honors College experience, focused on the question "what are the obligations of the educated citizen?" Helps students understand and handle complex intellectual issues from multiple perspectives. A selection of topics is announced and described in the undergraduate course schedule. Substitutes for LBST 499.

HOSP: Hospitality Management
Department of Hospitality Management
College of Health and Human Services

Note: Hospitality management courses were offered under the prefix HRIM before 2015-16

HOSP 101 Introduction to the Hospitality Industry 3c-0l-3cr

Examines the development and current status of the hospitality industry. Major hotel, restaurant, and related area employers are profiled. Career opportunities are discussed. Guest speakers from various hospitality industry segments are featured. Students are required to complete 10 hours of service learning.

HOSP 130 Food Service Sanitation 3c-0l-1cr

Introduces concepts and issues pertaining to sanitation and security management in the food service segment of the hospitality industry. Examines causes and prevention of food-borne illness, Hazard Analysis Critical Control Point (HACCP) food production methods, and current government regulations. (Titled Hospitality Sanitation and Security before 2015-16.)

HOSP 150 Principles of Hospitality Management 3c-0l-3cr

Introduces classic management theory and responsibilities, with an emphasis on hospitality industry applications.

HOSP 212 Club Operations Management 3c-0l-3cr

Provides an in-depth understanding of the unique aspects of private club management. The differences as compared to public golf courses, public restaurants, hotel operations, equity (member-owned), and non-equity (corporate-owned) club settings are explored.

HOSP 235 Tourism Management 3c-0l-3cr

Introduces concepts pertaining to international and domestic tourism. Examines the economic, social, and cultural aspects of tourism, as well as how destinations are marketed. (Offered as HOSP 115 before 2017-18.)

HOSP 245 Multicultural Management in Hospitality 3c-0l-3cr

Prerequisite: Sophomore standing
Examines the effects of international migration and changing roles of minorities within the global and domestic hospitality industry. Addresses the cultural factors affecting workplace productivity and relationships.

HOSP 250 Resort Management 3c-0l-3cr

Identifies characteristics of hospitality industry resort operations. Includes resort history, resort planning and development, food and beverage operations, lodging operations, recreational activities, and other relevant operational characteristics.

HOSP 255 Housekeeping Management 3c-0l-3cr Examines the operational responsibilities of the housekeeping department as found within hotel and lodging operations. Staffing, planning, cost management, purchasing, and cleaning responsibilities of hotel and lodging guestrooms, public areas, recreational areas, and other operational areas are addressed.	HOSP 300 Critiquing Commercial Restaurants 1c-0l-1cr A opportunity for the student of hospitality management to evaluate operational characteristics of commercial restaurants from the perspective of a dining patron. Students, as members of dining teams, dine in a variety of restaurant concepts and evaluate the business operation on a battery of performance criteria, including site appearance, menu diversity, service competence, product quality, and sanitation. Students incur out-of-pocket dining expenses.
HOSP 256 Human Resources in the Hospitality Industry 3c-0l-3cr Prerequisite: ENGL 101 Examines human resource management in the hospitality industry. Topics include cultural diversity, legal requirements, job analysis, recruitment and selection, training and development, performance appraisal, compensation, and benefits administration. Students are required to complete 10 hours of service learning.	HOSP 310 Professional Development in the Hospitality Industry 2c-0l-2cr Prerequisite: HOSP 256 An opportunity to identify and design industry-specific job search strategies, techniques, and skills including résumé and cover letter writing, interviewing, portfolio development, and strategies to attain career success within the hospitality industry.
HOSP 259 Hospitality Purchasing 3c-0l-3cr Includes sources, standards, grades, methods of purchase, and storage of various foods, beverages, and fixtures. Emphasizes the development of purchasing policies and specifications.	HOSP 313 Food Production and Service 1c-6l-4cr Prerequisites: HOSP 130, 150, instructor permission Introduces the management of food service operations in commercial kitchen facilities. Includes planning, preparation, and service of quantity food production. Emphasizes the integration of sanitation, menu planning, cost controls, and application of computer software.
HOSP 260 Hotel Operations Management 3c-0l-3cr Examines the development and classification of lodging operations. Hotel operating departments, department personnel, operational procedures, and current lodging trends and companies are discussed.	HOSP 320 Hospitality Marketing 3c-0l-3cr Students gain an understanding of the principles and concepts of marketing as they apply to hospitality management. Analyzes consumer behavior related to the hospitality industry. Students learn to make effective marketing decisions as they apply to customer satisfaction.
HOSP 265 Hospitality Cost Management 3c-0l-3cr Identifies and analyzes the control of hospitality operation costs, including those in the areas of food, beverage, labor, and material, and compares those costs to industry norms. Students analyze income statements and balance sheets.	HOSP 326 Theme Park and Attraction Management 3c-0l-3cr Prerequisite: HOSP 235 Provides a comprehensive view and an in-depth understanding about the various operational areas and managerial issues in theme parks and attractions.
HOSP 270 Professional Wedding Planning and Consulting 3c-0l-3cr An introduction to wedding planning and consulting in the hospitality industry. Examines the methodologies involved in planning all aspects of weddings, including venue selection, ceremony alternatives and protocol, reception considerations, budget development, vendor selection, contract negotiation, and other related topics.	HOSP 330 Applications of Food Production and Service 1c-6l-4cr Prerequisite: HOSP 313 or FDNT 150/151 Training for the hospitality management student in advanced fundamentals of technique, timing, and management skills through laboratory experiences, as well as the operation of the Allenwood Restaurant facility.
HOSP 272 Meeting and Convention Management 3c-0l-3cr An introduction to the management and economic impact of the convention, meeting, and exposition industry. Focuses on the development of strategies used to manage conferences, meetings, and trade shows to include the methodologies unique to each property and group served.	HOSP 335 Legal Issues in Hospitality 3c-0l-3cr Prerequisite: HOSP 256 Examines the concepts and issues pertaining to hotel and restaurant law, government regulations, and their impact on the hospitality industry. A special emphasis is on innkeeper-guest relationship, employee relations, food laws and liability, liquor law and liability, and guest rights.
HOSP 280 Special Event Management 3c-0l-3cr Introduces the principles of special event management and current practices and developments within the event-management industry. Discusses event management responsibilities from the initial planning stages through delivery.	HOSP 343 Fund-Raising for Special Events 3c-0l-3cr Prerequisite: HOSP 280 Relevant management tools, techniques, and strategies used for acquiring event revenue through fundraising and special event management are explored. Evolving legislation affecting sponsor and donor relationships is examined. The contemporary concept of sponsorship is benchmarked against a historical review to frame an understanding of how sponsor and organizational needs change.
HOSP 281 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.	HOSP 346 Catering for Special Events 3c-0l-3cr A practical understanding of the management tasks of a caterer and his/her relationship to the special events industry.
HOSP 285 Service, Menu Planning, and Facilities Design 3c-0l-3cr Focuses on food and beverage service characteristics, menu planning and design, and facilities design within various operational concepts in the hospitality industry.	HOSP 350 Introduction to the Casino Industry 3c-0l-3cr Examines the global casino industry from a historical perspective and includes legal, social, and economic issues. Also reviews the various games played in casinos, current trends, and popular global casino destinations.
HOSP 299 Cooperative Education (First Experience) 0cr Prerequisites: Completion of 30cr, 2.0 GPA A semester-long program that combines classroom theory with practical application through job-related experiences. Student required to complete two alternating experiences; only one may be a summer experience.	HOSP 358 Restaurant Equipment and Design 3c-0l-3cr Examines types and uses of food service production and service equipment with emphasis on incorporation into an effective facilities design. Field trips permit investigation of a variety of unit designs.

HOSP 365 Hospitality Physical Plant Management 3c-0l-3cr

Analyzes principles of hospitality operation design, construction, and physical plant management. Discusses hospitality maintenance department responsibilities and operations. (Titled Hotel Facilities Management before 2015-16.)

HOSP 367 Festival Management 3c-0l-3cr

Prerequisite: HOSP 280

Examines the international, regional, and local perspective of festivals and festival-event management. Examines and evaluates management, marketing, financial, and operational considerations together with strategies necessary to ensure viable festivals. (Offered as HOSP 275 before 2017-18.)

HOSP 400 Restaurant Revenue Management 3c-0l-3cr

Prerequisite: Junior standing

Promotes an understanding of the management of revenue in restaurant operations through the application of analytical tools to formulate and implement strategies in response to daily operational complexities and constraints to achieve budgetary objectives.

HOSP 402 Beverage Management 3c-0l-3cr

Prerequisite: Verifiable proof of 21 years of age or permission

Examines the principles, processes, and theories of beverage service. Analysis of methods of alcoholic beverage production and examination of categories of spirits, malt beverages, and wine, as well as legal concerns of service. Development and marketing of beverage operations are discussed. Includes voluntary tasting and evaluation of alcoholic beverage products.

HOSP 403 Wine and Wine Service 3c-0l-3cr

Prerequisite: All students must be 21 years of age or older

A study of the wine-growing regions, production, processing, and distribution of domestic and international wines. Topics include types of wine grapes, varieties of wine, proper storage procedures, the techniques of proper wine service, and responsible alcohol service.

HOSP 404 Brew Pub and Brewery Operations 3c-0l-3cr

Prerequisite: Verifiable proof of 21 years of age or older

Addresses the art of brewing beer, beer styles, brewing equipment requirements, responsible alcohol service, beer and food pairing, sales, and marketing. Students visit local breweries and brew pubs. Students are required to attend three daylong field trips.

HOSP 408 Hospitality Contract Operations Management 3c-0l-3cr

Examines characteristics of managing human resources, capital, materials, equipment, products, and markets as they pertain to hospitality contract operations. (Titled Institutions Management before 2015-16.)

HOSP 411 Contemporary Issues in Hospitality 3c-0l-3cr

Prerequisites: ENGL 101

Discussion of contemporary issues within the hospitality industry. Students write a series of opinion/reaction papers to presented discussion topics.

HOSP 413 Restaurant Food Production and Service 1c-6l-4cr

Prerequisites: Instructor permission

A food and beverage systems course emphasizing restaurant front-and-back-of-the-house operations management. Students research, plan, prepare, and present theme-oriented dinners showcasing selected domestic and international cuisine. Students function as both operations employees and managers within the department's food and beverage operation.

HOSP 420 Hotel Sales 3c-0l-3cr

A practical approach to understanding the functions and activities of the sales department within a hotel property. A thorough review of the organizational structure of a typical hotel sales department and documentation used by the department is made. Identification of and approaches to securing typical hotel market segments are covered.

HOSP 433 Educational Study Tour var-2-6cr

A comprehensive program of directed activities permits firsthand experiences in the historical and cultural aspects of the hospitality industry worldwide. Visits to renowned operations are included in the tour.

HOSP 450 Training, Development, and Supervision in Hospitality Management 3c-0l-3cr

Prerequisite: Instructor permission

Applied course in which students identify effective practices and examine current issues related to training and development within the hospitality industry.

HOSP 460 Labor and Employee Relations in the Hospitality Industry 3c-0l-3cr

Prerequisite: Instructor permission

Explores the history of the labor movement and the development of employee relations in the hospitality industry examining the major industry segments including lodging, restaurants, casinos, clubs, and related businesses. Students engage in a research project with the intention of presentation and/or publication submission

HOSP 470 Hospitality Business Planning 3c-0l-3cr

Prerequisites: Senior status and instructor permission

Provides the opportunity to integrate and apply hospitality operations management concepts into the development of a working hospitality business model.

HOSP 481 Special Topics var-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

HOSP 482 Independent Study in Hospitality Management var-1-6cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources. Must apply a semester in advance and have 60cr earned.

HOSP 493 Internship var-3-12cr

Prerequisites: 60 earned credits, 2.0 overall GPA

An opportunity for students to work in a supervised experience directly related to the hospitality management major. Must meet university and departmental internship requirements. Minimum of 40 work hours required for each scheduled credit.

Note: Kitchen food production uniforms are required for all lab courses in which food is prepared. Students must meet the professional dress requirements of the department.

**IFMG: Information Management
Department of Information Systems and Decision Sciences
Eberly College of Business and Information Technology**

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

IFMG 101 Computer Literacy 3c-0l-3cr

An introductory course providing a fundamental understanding of computers. Familiarizes students with the interaction of computer hardware and software. Emphasizes the application of microcomputers, the use of productivity software (word processing, spreadsheet management, file and database management, presentation graphics, web browsers, search strategies, and e-mail), and the social and ethical aspects of the impact of computers on society. (Does not count toward computer science major.) *Note:* cross-listed as BTED/COSC 101. Any of these courses may be substituted

for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

IFMG 110 Business Spreadsheet Computing 3c-0l-3cr

Introduces the fundamentals of the use of spreadsheet technology in the business environment. Familiarizes the students to the different formats and setups for business data. Illustrates various uses of spreadsheet formulas and functions in the business environment. Explains the application of charts and graphs for data analysis and also for collecting and sharing data. Demonstrates the use of spreadsheet tools in the analysis of research data.

IFMG 210 Introduction to Front-End Business Applications 3c-0l-3cr

Prerequisite: BTED/COSC/IFMG 101

An introduction to systems and development concepts, information technology, and front-end business application software. Explains how information is used in organizations and how MIS enables improvement in quality, timeliness, and competitive advantage. Students learn how to design and construct a front-end business application using a programming language.

IFMG 230 Introduction to Back-End Business Applications 3c-0l-3cr

Prerequisite: BTED/COSC/IFMG 101

Introduces the back-end business programming language as it applies to business organizations and their applications. Structured back-end business concepts and methods are taught as the student learns how to solve business problems using computers. Involves using files, reports, and tables to produce a variety of outputs utilized in operating and managing business activities.

IFMG 250 Business Systems Technology 3c-0l-3cr

Prerequisite: BTED/COSC/IFMG 101 or COSC 110

Presents a functional review of computing equipment and the organization of components and devices into architectural configurations. Also teaches the principles of system software and builds an understanding of combinations of hardware and software within architectural designs.

IFMG 254 Computer Technology Virtualization 3c-0l-3cr

Prerequisite: IFMG 250

Introduces virtualization technology in the computing environment through the study of various related tools. Highlights key issues related to creating and using the virtual environment infrastructure. Presents alternatives for incorporating virtualization solutions at organizations. Uses technological case studies and practical applications. Prepares students to propose virtualization solutions for enterprise computing environments.

IFMG 300 Management Information Systems: Theory and Practice 3c-0l-3cr

Prerequisite: COSC/BTED/IFMG 101

Includes basic MIS concepts, fundamentals, and practices. Broad areas of coverage are principles, the computer as a problem-solving tool, computer-based information systems (CBIS), organizational information systems, and information systems management.

IFMG 305 Micro Database Systems 3c-0l-3cr

Prerequisite: BTED/COSC/IFMG 101

The fundamentals of database management, including different database models and database design issues, are examined. Emphasizes the use of various tools of relational database software, including report generators, screen builders, and query facilities. Design techniques and software tools are used in creating a database application. Intended as an elective for business students who are not majoring in management information systems (MIS). MIS majors may not count this course toward their graduation requirements.

IFMG 330 Advanced Back-End Business Applications 3c-0l-3cr

Prerequisite: IFMG 230 or COSC 220

Explores back-end business programming language as it applies to business organizations and their applications. Shows ways to embed and link a variety of techniques of back-end business concepts and methods to solve

business problems using computers and web technologies. The student implements back-end business and user interface techniques in managing business activities.

IFMG 352 LAN Design and Installation 3c-0l-3cr

Prerequisite: BTST 273 or IFMG 250 or any computer science course numbered 300 or higher

A study of fundamental local area networking concepts. A detailed study of the basics of local area network (LAN) technology. A comparative study of commercially available LAN systems and products. Features a hands-on laboratory implementation of a LAN. Cross-listed as COSC 352. Either course may be substituted for the other for D/F repeats but may not be taken for duplicate credit.

IFMG 360 Information Storage and Management 3c-0l-3cr

Prerequisite: IFMG 352

Provides the knowledge for understanding the storage infrastructure required to store this information in personal, enterprise, and cloud computing settings. Focuses on the different components of storage infrastructure and how to successfully manage it. Examines basic and advanced concepts of storage technology to enable evaluation and design of storage architectures with features to meet a variety of technical and business needs. Considers disaster recovery and business continuity solutions such as backups, replication, and archiving which is related to the broader field of information assurance.

IFMG 368 E-Commerce Security 3c-0l-3cr

Prerequisite: IFMG 352

Introduces the security concepts, operating systems security, network security, database, web server, and communication security. Public and common practices of procedures and regulations regarding e-commerce security are explored. Writing information security policies is introduced.

IFMG 390 Database Theory and Practice 3c-0l-3cr

Prerequisite: IFMG 210 or 230 or COSC 220

Reviews database design, data model methodologies, physical data structure, and database development and implementation. Introduces the remote data service, transaction server, and database administration. Emphasizes the practical approach in accessing the database using Internet technology.

IFMG 414 Internet of Things 3c-0l-3cr

Prerequisites: IFMG 352 and IFMG 210 or 230

Introduces the world of the Internet of Things (IoT) including conceptual foundations and practical applications. Presents the theoretical concepts and the hands on knowledge on creating and managing IoT applications through assigned readings, prototyping, simulation, and mock-up exercises. Classifies business models applicable to IoT. Examines the ethical standards pertinent to the field of IoT.

IFMG 455 Business Data Mining 3c-0l-3cr

Prerequisite: IFMG 390

Introduces the strategies, technologies, and techniques associated with this growing MIS specialty area. Consists of three main parts: (1) the basic methodology for designing, using, and managing a data warehouse, (2) integrating different sources of data using non-relational technologies, and (3) using different data mining techniques to derive information from data for strategic and long-term business decision-making. (Titled Data Warehousing and Mining before 2016-17.)

IFMG 456 Business Intelligence, Informatics, and Big Data Analysis 3c-0l-3cr

Prerequisites: QBUS 215, instructor permission (determination of appropriate background done by the instructor)

Primarily concerned with business analysis dealing with quantitative approaches, including those involving big data, for decision making for Business Intelligence and Informatics (BII). Big Data (BD) is the term for a collection of data sets that are so large and complex that it becomes difficult to process this data by using on-hand database management tools or traditional data processing applications alone.

IFMG 460 Analysis and Logical Design 3c-0l-3cr**Prerequisites:** (IFMG 210 or 230) and IFMG 352, 390

Involves teaching the tools and techniques required for the analysis and design of a business system. Along with in-class discussions of the principles and techniques for analyzing, designing, and constructing the system, the students also formulate system teams in order to analyze the problems of an existing business information system, to design an improved system, and to control the implementation of the new system.

IFMG 471 Data Center and Cloud Computing 3c-0l-3cr**Prerequisites:** IFMG 254, 360

Introduces the building and managing of data centers as a cloud on the network. Focuses on the fundamentals regarding data center system configuration, networking, storage, and application. Examines different kinds of cloud service and delivery models. Discusses the management of data center security.

IFMG 475 Project Management and Implementation 3c-0l-3cr**Prerequisite:** IFMG 460

Introduces the demands made on the project manager and the nature of the manager's interaction with the rest of the parent organization in development of a business information system. Studies the difficult problems associated with conducting a project using people and organizations that represent different cultures and politics and that may be separated by considerable distances. Also covers how to implement and carry out the development of the project using several information systems development methodologies.

IFMG 481 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

IFMG 482 Independent Study var-1-3cr**Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Approval based on academic appropriateness and availability of resources.

IFMG 493 Internship in MIS var-3-12cr**Prerequisites:** IFMG 352, 390, consent of department chairperson

Positions with participating business, industry, or governmental organizations provide experience in systems analysis. Note: Can be taken as a 3cr major-area elective requirement.

INDS: Interior Design

Department of Human Development, Fashion, and Interior Design
College of Health and Human Services

INDS 105 Introduction to Interior Design 3c-0l-3cr

Presents an overview of the interior design profession. Emphasizes the responsibilities of the interior designer and the many career opportunities available.

INDS 110 Color and Light 3c-0l-3cr

Focuses on color and lighting fundamentals applicable to the environmental design of commercial and residential spaces. Includes general color and lighting terminology, theory of color visibility and perception, and how color and light work together to create functional, aesthetic, and sustainable interior environments.

INDS 118 Interior Design Graphics 1c-3l-3cr

Introduces two- and three-dimensional traditional graphic skills including basic sketching, drafting, and perspective drawing as applicable to the responsibilities of interior designers. Emphasizes acceptable drafting standards, graphic layout, and visual organization through projects.

INDS 205 Color Theory and Application 3c-0l-3cr

The theoretical basis of color is presented as it relates to the human visual system, light, pigment, perception, and measurement. The application of color theory is discussed in terms of interior design, merchandising, and display.

INDS 218 Computer Technology for Interior Design 1c-3l-3cr

Introduces basic computer-aided drafting and design (CADD) for designers; emphasizes CADD theory and the value of the computer as a problem solving, design tool.

INDS 219 Kitchen and Bath Design 1c-3l-3cr**Prerequisite:** Junior standing

Explores many facets of the kitchen- and bath-design industry. Analyzes kitchen and bathroom spaces according to the National Kitchen and Bath Association (NKBA) standards. Utilizes current design software. (Offered as INDS 319 before 2017-18.)

INDS 230 Presentation for Interior Design 1c-3l-3cr**Prerequisite:** INDS 118

Introduces visualization approaches used for professional presentations of interior design concepts. As a project-based course, the focus is on both two- and three-dimensional drawings and the use of color to create depth and enhance the quality of both traditional and digital drawings used to present interior design solutions.

INDS 240 Three-Dimensional Design for Interior Design 1c-3l-3cr**Prerequisite:** INDS 118

An introduction to three-dimensional design thinking and presentation. Exploratory exercises strengthen three-dimensional conceptual skills of interior space. Technical studies investigate presentation techniques, model-making, spatial theory analysis, and vocabulary.

INDS 305 Interior Lighting 3c-0l-3cr**Prerequisite:** INDS 105 or equivalent

Lighting fundamentals applicable to the environmental design of residential and commercial spaces. Includes calculation methods, terminology, theory of color visibility, light source alternatives, fixture function and selection, lighting trends, and related professional organizations.

INDS 310 Human Factors in Interior Design 3c-0l-3cr**Prerequisite:** Junior standing

The study of human and technology systems interface as related to interior design. Emphasizes ergonomic and economic decision making to ensure that the user can function with a minimum of stress and a maximum of efficiency.

INDS 313 Building Systems I: Materials and Finishes 3c-0l-3cr**Prerequisite:** Junior standing

Introduces the basic methods of structural and non-structural construction including ceilings, floors, walls, doors, and windows relative to interior space planning. Focuses on the materials and finishes used to complete the interior space, as well as those used on furniture, fixtures, and equipment. Examines manufacturing techniques, application, specification guidelines, estimating, and installation methods. Considers relevant codes, environmental issues, and impact on the responsibilities and decision making of interior designers.

INDS 315 Residential Design Studio 1c-3l-3cr**Prerequisite:** INDS 218

Applies interior design space planning and design problem-solving processes to residential design and emphasizes digital and graphic communication and presentation of those solutions.

INDS 323 Building Systems II: Mechanicals 3c-0l-3cr**Prerequisite:** INDS 313

Provides a broad overview of the various architectural building systems (mechanical, lighting, electrical, plumbing, acoustic, thermal, communications, security, and conveyance) as they affect the responsibilities and decision making of interior designers. Addresses relevant building and fire codes, vocabulary, and environmental concerns.

INDS 370 History of Interior Design and Architecture I 3c-0l-3cr

Chronological study from ancient times to the mid-19th century of the dominant influences and characteristics of historical interiors, furniture, and ornamental design. Emphasis placed on stylistic detail and its relationship to social, economic, political, religious, and aesthetic influences and to the contemporary scene.

INDS 380 History of Interior Design and Architecture II 3c-0l-3cr

Prerequisite: INDS 370

Chronological study from mid-19th century to the present of the dominant influences and characteristics of interiors, furniture, and ornamental design. Emphasis placed on stylistic detail and its relationship to social, economic, political, religious, and aesthetic influences and to the contemporary usage.

INDS 405 Interior Design Professional Practice 3c-0l-3cr

Prerequisite: Junior standing

Planning, business organization, management, contracts, procedures, and ethics for the professional interior designer.

INDS 460 Portfolio 1c-2l-3cr

Prerequisite: Senior standing

Focuses on professionalism in the preparation of an interior design portfolio. Concentrates on traditional portfolio composition with an emphasis on the ability to transition to digital portfolio as necessary.

INDS 464 Commercial Design Studio I 1c-3l-3cr

Prerequisite: INDS 319

Applies interior design space planning and design problem-solving processes to nonresidential design and links goals in interior design and facility management.

INDS 465 Commercial Design Studio II 1c-3l-3cr

Prerequisite: INDS 464

A studio, project-based course, ascertaining the process to be followed in developing large-scale nonresidential interior design schemes of more than 10,000 square feet.

INDS 482 Independent Study var-1-3cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

JAPN: Japanese
Department of Foreign Languages
College of Humanities and Social Sciences

JAPN 101 Elementary Japanese I 4c-0l-4cr

For beginning students. Introduces the Japanese language, with attention focused on three modes of communication: interpretive listening and reading, interpersonal speaking and writing, and presentational speaking and writing. Students learn pronunciation, fundamental grammatical patterns, and how to write hiragana, katakana, and basic kanji. Students learn to converse and ask questions in simple present and past time and become acquainted with aspects of Japanese culture and society. May not register for or take a D/F repeat in JAPN 101 when credit has already been received for a higher-numbered Japanese course.

JAPN 102 Elementary Japanese II 4c-0l-4cr

Prerequisite: JAPN 101 or equivalent

A continuation of JAPN 101. Focusing on communication through listening, speaking, reading, and writing. Students continue to learn to identify and write basic kanji characters. Builds on the three modes of communication—interpretive, interpersonal, and presentational—to build proficiency in using the Japanese language in real-life situations. Also imparts knowledge of Japanese culture and society. May not register for or take a D/F repeat in JAPN 102 when credit has already been received for a higher-numbered Japanese course.

JAPN 201 Intermediate Japanese

4c-0l-4cr

Prerequisite: JAPN 102 or equivalent

A continuation of JAPN 102. Focusing on communication through listening, speaking, reading, and writing so that students can function in everyday situations. Students continue to learn to identify and write intermediate kanji characters. Also imparts knowledge of Japanese culture and society. Liberal Studies credit is given. May not register for or take a D/F repeat in JAPN 201 when credit has already been received for a higher-numbered Japanese course.

JRNL: Journalism and Public Relations
Department of Journalism and Public Relations
College of Humanities and Social Sciences

JRNL 102 Basic Journalistic Skills

3c-0l-3cr

Required for journalism and public relations majors and minors. Emphasizes grammar, punctuation, spelling, *AP Stylebook*, copyediting, headlines, and accuracy.

JRNL 105 Journalism and the Mass Media

3c-0l-3cr

A critical examination of the roles-goals of the mass media (newspapers, magazines, radio and television, Internet and other online services) as they affect the American society socially, politically, culturally, and economically.

JRNL 120 Journalistic Techniques for Professional Writing

3c-0l-3cr

Prerequisites: ENGL 101, nonmajors/minors

Emphasizes intelligent use of writing ability in a journalistic style and understanding of the why of journalism and mass media. Practices and improves writing skills.

JRNL 126 Introduction to Public Relations

3c-0l-3cr

Introduces students to the principles, practices, programs, and possibilities in the various areas of public relations.

JRNL 215 Media Convergence in Journalism

3c-0l-3cr

Explores the digitization of journalism, public relations, and its many forms. Students learn how to digitize and work with media including the capture, editing, and distribution of new media, as well as the history and economics of digital media.

JRNL 220 Writing for Media

3c-0l-3cr

Prerequisites: JRNL 102 with a grade of “C” or better, journalism and public relations majors only

A course in journalistic style for students who plan to become professional writers. Teaches the basic journalistic formats and strategies used in print media—such as the summary lead, the delayed lead, and the conventional news-story format—and in digital and online media, such as writing for blogs and writing in chunks. Throughout, emphasizes economy, clarity, and the development of voice for a given medium.

JRNL 223 Photojournalism

3c-0l-3cr

Prerequisite: JRNL 105 or COMM 101 or instructor permission

An introduction to still photography for news media. Includes preparation of a portfolio and learning of specialized processing techniques for high-speed work.

JRNL 243 History of the American Press

3c-0l-3cr

Prerequisite: JRNL 105 or COMM 101

Traces the development of the American press from its Colonial roots. Emphasizes the role of the press in political and social development.

JRNL 250 Women and the Press

3c-0l-3cr

Prerequisites: ENGL 101

Explores the role of women in American journalism. Includes study of lives/careers of women journalists and their specific contributions to the profession. Emphasizes evolution of equal opportunity for women and other minorities in the American press. Attention to the changing definition of news as influenced by the inclusion of women and minorities in editorial roles.

JRNL 261 Introduction to the Magazine Industry 3c-0l-3cr**Prerequisite:** Sophomore standing or instructor permission

Introduces the magazine industry, how it is managed, how it functions, its strategies, and its roles and goals in society.

JRNL 281 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

JRNL 301 Presentation Making 3c-0l-3cr

Gives practice in writing and making oral presentations based on public relations cases and problems. Familiarizes the student with problem-solving and small-group communication skills necessary for those working in the area of public affairs.

JRNL 310 Writing for Online Media 3c-0l-3cr**Prerequisite:** JRNL120 or 220 or instructor permission

Teaches techniques to help students develop reporting, writing, and editing skills to communicate effectively in an online media environment. Focuses on the continuum of the online news cycle, nonlinear nature, and interactive elements of the online platform and fundamental differences and similarities between online and traditional media, including ethical and legal uses.

JRNL 321 Feature Writing 3c-0l-3cr**Prerequisites:** JRNL 102, 220

For the student who might work in journalism or who might wish to write on a part-time or freelance basis.

JRNL 325 Public Relations Campaigns 3c-0l-3cr**Prerequisites:** JRNL 126, 220

An advanced public relations course that teaches students to plan a comprehensive public relations campaign from start to finish, following the Research, Plan, Execute, Evaluate Model. Students outline plans for contacting media outlets and creating and maintaining social media communities. They create slogans and advertisements consistent with branding.

JRNL 327 Layout, Design, and Production 2c-3l-3cr**Prerequisite:** JRNL 105 or COMM 101

Basic techniques and theories of layout, design, and production, including typography, copyfitting, photo/art cropping and scaling, and steps in design process. Includes desktop publishing in the design of ads, newspapers, newsletters, brochures, and magazines.

JRNL 328 News Reporting 3c-0l-3cr**Prerequisites:** Grades of "C" or better in JRNL 102, 105, and 220; majors only

Includes instruction in writing the news story, preparing copy, interviewing, covering special events, and similar reporting activities.

JRNL 337 Editing 3c-0l-3cr**Prerequisite:** JRNL 120 or 220

Stresses basic practices such as copyediting and headline writing while also focusing on guidelines for improving accuracy, clarity, transition, spelling, and punctuation of copy. Students use wire service stylebook extensively.

JRNL 344 Issues and Problems 3c-0l-3cr**Prerequisite:** JRNL 105 or COMM 101

Examines critical case histories of ethical and professional situations and circumstances in the mass communication industry in a lecture and discussion format.

JRNL 345 Sports Journalism 3c-0l-3cr**Prerequisite:** JRNL 220

Emphasizes skills for covering, writing, and editing of sports and introduces specific practices in newspaper, radio-TV, and sports information work.

JRNL 347 Journalism Law and Ethics 3c-0l-3cr**Prerequisites:** JRNL 105 or COMM 101, permission

Introduces students to the laws that govern the mass media in America, notably libel, privacy, and free press/fair trial and their impact on First

Amendment rights of a free press. Also focuses on media ethics and its application in journalism.

JRNL 348 Opinion Writing 3c-0l-3cr**Prerequisite:** Junior/senior standing

Emphasizes the writing of vigorous but thoughtful and fair editorials. Study of contemporary practice and policy on letters to the editor, columnists, cartoons, the op-ed page.

JRNL 375 World News Coverage 3c-0l-3cr**Prerequisites:** Sophomore standing, instructor permission

Challenges students to compare and contrast the coverage of international news sources from around the world and how they impact people's awareness, attitudes, and behavior in a multiculturally differentiated world.

Emphasis is placed on interpreting comparative coverage of events among the developing world and the Western-dominated international news media sources and understanding the geopolitics of world news. Students critique not only current international news but, more important, how it is reported. The goal is to foster a critical and analytical attitude toward news to gain a broad-based, balanced, global, and multicultural awareness of the human subjects of international news.

JRNL 400 Professional Preparation 1c-0l-1cr**Prerequisites:** JRNL 328, journalism and public relations major

Prepares majors for the professional world by exploring short- and long-term career goals, creating materials for self-marketing, and managing the personal and behavioral transition from college to the workplace in newspapers, magazines, public relations, and visual journalism.

JRNL 425 Entertainment PR 3c-0l-3cr**Prerequisites:** JRNL 126, 220

An advanced public relations course that explores image building, image repair, and personal public relations as they relate to the entertainment industry. Students critically examine the entertainment field—to include sports, tourism, music, theater, movies—through a public relations lens.

JRNL 427 Publications 3c-0l-3cr**Prerequisite:** JRNL 327 or instructor permission

Advanced techniques and theories of publications design, including the legibility principles of typography, the psychological impact of color and paper, and designing online publications, such as newspapers, newsletters, and magazines. Also teaches principles and concepts of publications management, including coping with deadline pressures, the creative disposition, and the marketing of publications. The class produces a total publication.

JRNL 430 Public Opinion and the News Media 3c-0l-3cr**Prerequisite:** Junior standing

Deals with understanding and measuring public opinion. Emphasizes critically analyzing the historical origins and the dynamics of public opinion in the policymaking process as well as the role of the news media in public opinion. Students then measure people's thinking on any given issue or issues.

JRNL 450 Advertising Writing 3c-0l-3cr**Prerequisites:** JRNL 220, instructor permission

A basic course in the preparation of advertising copy and continuity for all media. A combination of lecture and laboratory course. Enrollment is limited to upperclass majors.

JRNL 466 Community Journalism 3c-0l-3cr**Prerequisites:** Junior standing, permission

Emphasizes practical knowledge and skills in identifying, covering, and writing professionally about community issues and events, including local government, public affairs, the courts, and breaking news. Students also learn how to interview community leaders and use a variety of sources to access relevant information.

JRNL 481 Special Topics var-1-3cr**Prerequisite:** As appropriate to course content

Topics vary from semester to semester, covering a number of journalism specialties. From time to time they are converted to permanent course

numbers. Special topics numbered 481 are offered primarily for upper-level undergraduate students.

JRNL 482 Independent Study **var-1-6cr**
Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Opportunities for independent study that go beyond the usual classroom activities. Approval based on academic appropriateness and availability of resources; enrollment is limited to 15 upperclass majors per semester.

JRNL 490 Public Relations Writing **3c-0l-3cr**
Prerequisites: JRNL 126, 220
A public relations writing class that includes assignments such as releases, features, newsletters, reports, biographies, rewrites, hometown stories, copyediting, interviewing, research, and special projects.

JRNL 492 Problem Solving in Public Relations **3c-0l-3cr**
Prerequisite: JRNL 126
Introduces techniques for analyzing and tracking information flow in organizations. Introduces creative problem-solving techniques that are standard practice in corporate research groups.

JRNL 493 Internship **var-6-12cr**
Prerequisites: Grades of "C" or better in JRNL 102, 105, 220, 328, 347, 400; 2.3 cumulative GPA and 2.5 GPA in the major; department approval
On-the-job training opportunities in journalism and related areas. Maximum of 6cr may be applied to 34cr minimum of major.

KHSS: Kinesiology, Health, and Sport Science
Department of Kinesiology, Health, and Sport Science
College of Health and Human Services

KHSS 135 Careers in Kinesiology, Health, and Sport **1c-0l-1cr**
Prerequisite: Health and physical education, physical education and sport, or athletic training majors
Emphasizes development of attributes associated with professionalism and examines occupational opportunities that exist for students majoring in kinesiology, health, and sport.

KHSS 142 Foundations of Health, Physical Education, and Sport **3c-0l-3cr**
Prerequisite: Health and physical education, physical education and sport, athletic training majors
Historical, philosophical, and psychosocial foundations of health and physical education are introduced. Specific emphasis is given to scientific theories and principles in such areas as health promotion and behavioral change, exercise physiology, motor development, kinesiology, and motor learning.

KHSS 143 Contemporary Women's Wellness **3c-0l-3cr**
Explores issues relating to the physical, emotional, and social aspects of special significance to women's health across the life span. Within the context of contemporary lifestyle and cultural influences, relevant health information affecting women of all ages, races, and ethnicities is presented. Current trends in the prevention and control of chronic diseases and health disorders as well as practical applications of information and resources to help each student develop a personal wellness plan and the knowledge to become a women's health advocate are emphasized. Successful completion fulfills the Liberal Studies Dimensions of Wellness requirements. Other 143 courses also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicated credit.

KHSS 143 Physical Well-Being **3c-0l-3cr**
An overview of personal health and wellness. Emphasis is given to physical dimension in the attainment of well-being. Topical areas include, but are not limited to, exercise and fitness, healthy eating and weight management, substance use and abuse, disease prevention, and sexuality. Also covers stress management and emotional wellness. Guides in the development of an individualized wellness plan to improve overall physical well-being. Successful completion fulfills the Liberal Studies Dimensions of Wellness requirement. Other 143 courses also fulfill this requirement, and any of these courses

may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

KHSS 143 Wellness through Strength Training **3c-0l-3cr**
Promotes the attainment of personal well-being through the use of a comprehensive strength training program. Students will focus on the attainment of improved wellness by creating and participating in an exercise regime that focuses on muscular fitness, flexibility, and body composition. The exercise program will utilize a variety of resistive regimes including kettle bells, dumbbell circuits, and plyometrics. Students will evaluate their current level of fitness then participate in a physical activity self-improvement program. Meets Dimensions of Wellness for Liberal Studies requirement. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

KHSS 146 Foundations of Exercise Science **1c-0l-1cr**
Examines the historical development of the exercise science field. Focuses on the importance of professionalism, certifications, and credentialing to be successful in the field. Reviews a variety of sub-disciplines, research, and current career opportunities in the field.

KHSS 162 Scuba Diving **0c-2l-1cr**
Teaches necessary skills and proper use of equipment for underwater swimming. Tanks, regulators, weights, and special equipment furnished. Student must purchase a mask, fins, and snorkel (approximately \$15). Includes theory as well as practical work.

KHSS 175 Prevention and Care of Injuries to the Physically Active **2c-0l-2cr**
Prerequisite: Health and physical education, physical education and sport, athletic coaching certificate students
Presents general information related to the prevention, recognition, and care of both acute and chronic injuries common to participants of physical activity/fitness and athletics. Includes prevention techniques, the classification and staging of injury conditions, and basic evaluation techniques, as well as emergency management and follow-up care procedures.

KHSS 185 Introduction to Athletic Training **3c-0l-3cr**
Addresses the historical development of athletic training and the scope of present programs. Introduces the domains and competencies of the athletic training profession.

KHSS 209 Motor Behavior **3c-0l-3cr**
Prerequisite: Must be a major enrolled in Kinesiology, Health, and Sport Science Department or instructor permission
Studies the process of human motor behavior across the life span, specifically examining how development of mental and motor abilities affects human movement. Students are required to have appropriate child background clearances.

KHSS 213 Recreational Sports and Lifetime Activities **3c-1l-3cr**
Prerequisites: EDSP 102, KHSS 135
Provides exposure to contemporary recreational sports and lifetime physical activities. Includes an overview of all aspects for multiple physical activities, including the history, equipment, fundamental skills and assessment, rules, strategy, and etiquette.

KHSS 214 Teaching Health Fitness and Gymnastics **1c-2l-1cr**
Prerequisite: KHSS 209
Provides the health and physical educator with an overview of the fundamentals and techniques of instructing personal fitness and gymnastics. Includes opportunities for skill development, analysis, and strategies for incorporating fitness and gymnastics into the physical education curriculum.

KHSS 215 Teaching Rhythmic Activities and Dance **1c-2l-1cr**
Prerequisite: KHSS 209
An aesthetic and kinesthetic movement experience that prepares the student to be a teacher of basic movement in a variety of situations. Includes creative movement, rhythms, and square, folk, and contemporary dance.

KHSS 216 Instruction of Fundamental Movement Skills**3c-1l-3cr****Prerequisites:** EDSP 102, KHSS 209

An introduction to instructional methods of fundamental movement categories such as motor skills, manipulative, body management, rhythmic movement, and game skills. Emphasis is on program standards, objectives, and assessments for ages 6-12. An overview of characteristics of children and appropriate activities for this age group. Includes opportunities to improve personal skills, develop units, and teach peers and school-age children. (Titled Teaching Elementary Physical Education before 2015-16.)

KHSS 217 Teaching Middle School Physical Education**2c-2l-2cr****Prerequisites:** EDSP 102, KHSS 142

An introduction to instructional methods in physical education with an emphasis on program standards, objectives, and assessments for sixth through eighth grades. An overview of characteristics of middle school children and appropriate activities for this age group. Includes opportunities to improve personal skills, develop units, and teach peers and school-age children.

KHSS 218 Instruction of Tactical Skills and Fitness Concepts**3c-1l-3cr****Prerequisites:** EDSP 102, KHSS 216

An introduction to instructional methods in strategic game skills used in many sports and activities with an emphasis on program standards, objectives, and assessments for ages 12-18. Strategies and techniques of instructing personal fitness for adolescents is also covered. An overview of characteristics of adolescents and appropriate activities for this age group. Includes opportunities to improve personal skills, develop units, and teach adolescents ages 12-18. (Titled Teaching Secondary Physical Education before 2015-16.)

KHSS 221 Human Structure and Function**3c-0l-3cr**

Anatomical organization of the human body, surveyed in sufficient depth to prepare students for physiology, biomechanics, and adaptive physical education.

KHSS 225 Social Issues in Sport**3c-0l-3cr**

Sport is a topic that permeates virtually all aspects of society. Investigates sport from historical, philosophical, and social perspectives. Various social theories are used to examine the interaction of sport and society through exploration of issues related to business, deviance, disability, gender, media, social class, politics, and race as they pertain to sport.

KHSS 242 Emergency Health Care**1c-2l-1cr****Prerequisites:** Admission to Teacher Education Program, junior standing

American Red Cross Standard, Advanced, and Instructor's certification and Multimedia Instructor's certification awarded upon successful completion.

KHSS 251 Foundations of Safety and Emergency Health Care**3c-0l-3cr**

Focuses on accident prevention, injury control, and first responder's skills. Emphasizes identification of causes of accidents, recommended counter-measures, and mitigation. American Red Cross certifications are issued in (1) standard first aid, (2) community CPR, (3) instructor of standard first aid, and (4) instructor of community CPR.

KHSS 252 Introduction to the Driving Task**2c-2l-3cr**

Provides an in-depth treatment of operating a motor vehicle competently in all major variations and under most conditions encountered in traffic. A competent operator is one who performs the total driving task knowledgeably and skillfully and demonstrates full understanding and application of identification, prediction, decision, and execution process.

KHSS 256 Applied Human Structure and Conditioning**3c-0l-3cr**

Prerequisite: Physical education and sport/sport administration major
The emphasis is on developing an anatomical and physiological knowledge base as it applies to exercise, conditioning, and training of the physically active. Specific body systems presented include skeletal, muscular, cardio-respiratory, and nervous. Components of each system are addressed as they

pertain to exercise and training concepts, such as speed, strength, muscular and cardiovascular endurance, flexibility, aerobic capacity, power, and other physiological factors related to performance and physical activity.

KHSS 261 Water Safety Instructor**1c-2l-1cr****Prerequisites:** Basic swimming skills

Students learn to teach children and adults basic swimming and water safety skills. Emphasis placed on proper body mechanics and teaching progressions. Students have opportunity to earn American Red Cross Water Safety Instructor certification upon successful completion of requirements.

KHSS 263 Aquatics**0c-2l-1cr**

Basic performance techniques in swimming strokes presented with special emphasis on teaching methodology, aquatic sports and games, water safety, skin diving, springboard diving, and other aquatic activities.

KHSS 280 Aquatic Facilities Management**2c-0l-2cr**

An organizational and administrative course to prepare the aquatic professional for management of indoor and outdoor facilities. Includes facility design, safety procedures activity, and sport and recreational aspects.

KHSS 281 Special Topics**var-1-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

KHSS 285 Group/Individual Exercise Leadership**1c-2l-3cr**

Prerequisites: Physical education and sport/exercise science majors, KHSS 221 with a grade of "C" or better, or BIOL 150 with a grade C or better

Provides theoretical knowledge of leadership skills necessary to design, implement, and evaluate safe and effective exercise programs in group and individual settings. An emphasis is placed on group exercise leadership and fitness instruction. Students are also introduced to the management and administration of such programs. Observations within the field are required, as well as opportunities to apply introductory concepts of exercise training through practical application.

KHSS 286 Personal Training Practicum**2c-1l-3cr****Prerequisite:** KHSS 221 or BIOL 150

Provides theoretical knowledge of leadership skills necessary to design, implement, and evaluate safe and effective personal training programs. Requires networking within the field as well as opportunities to apply introductory concepts of exercise training and business development through practical application.

KHSS 292 Introduction to Sport Management**3c-0l-3cr**

Introduces theories and practices in the field of sport management. Emphasizes management principles, leadership competencies, ethical principles, and governance in the sport industry. An introduction to sport marketing, sport finance, and sport law is provided.

KHSS 315 Biomechanics**3c-0l-3cr**

Prerequisite: A grade of "C" or better in KHSS 221 or a grade of "C" or better in BIOL 150

A study of the relationship between mechanical and physical principles and human movement.

KHSS 316 Instruction of Child Health Concepts**3c-0l-3cr****Prerequisites:** EDSP 102, KHSS 142

Introduces the theories of instruction and methods for teaching health education to elementary school-aged children. Identifies developmentally appropriate teaching methods and activities, reviews and assesses current health curriculum, and demonstrates the use of technology in the instructional setting. Provides opportunities for observation, lesson planning, and teaching of health education to children. (Titled Teaching Elementary Health Education before 2015-16.)

- KHSS 318 Preprofessional Experience I** **3c-0l-3cr**
Prerequisites: KHSS 209, 216, health and physical education majors only
 Students assist a university faculty member teach in several instructional settings, including elementary school physical education program or community-based wellness programs. Students have the opportunity to apply pedagogical theory and concepts related to various professional areas. Emphasis is on planning, developing, implementing, and assessing educational experiences.
- KHSS 319 Field Practicum I** **3c-0l-3cr**
Prerequisite: Sophomore status
 An initial experience in the professional work setting. Combines classroom theory with practical application through job-related experience to build on professional knowledge and skills. (Titled Preprofessional Experience II before 2016-17.)
- KHSS 320 Managing Facilities and Events in Sport** **3c-0l-3cr**
 Investigates the management functions necessary to operate a variety of sport facilities. Emphasizes liability risk reduction, staffing, design and renovation, maintenance, and amenities pertinent to sport facilities. Strategies for managing a sporting event are presented and practiced.
- KHSS 325 School and Community Health** **3c-0l-3cr**
 Introduces the role of school and community in protecting and promoting the health of its members. Topics include historical development of the concepts of health and health education, identification of national and community goals to reduce risk of disease and enhance health status, and the responsibilities of both school and community toward achieving these goals.
- KHSS 330 Assessment in Physical Education** **0c-2l-1cr**
Prerequisite: Health and physical education major
 Provides preservice physical education teachers with an understanding of assessment strategies and techniques commonly used in physical education. Provides the opportunity to administer different motor skill and physical fitness assessments and to utilize computer applications associated with these assessments.
- KHSS 333 Psychology of Coaching** **3c-0l-3cr**
 Emphasizes the interaction between sport psychology and coaching strategies. Includes history of sports psychology, motivating athletes, coaching various personality types, and controlling emotions and stress in athletes. Focuses on the impact of social influence, group dynamics, and character development on sport performance. Examines aggression in sport as well as gender differences and cultural diversity issues.
- KHSS 335 Athletic Coaching** **3c-0l-3cr**
 Emphasizes coaching strategies and techniques for all sports. Includes coaching philosophy and style, motivating athletes and managing their behavior, teaching technical and tactical skills, and planning an approach to games and practices. Focuses on conditioning techniques, proper nutrition, and drug and alcohol prevention in athletes. The administration of the team, parents, referees, and liability risks is stressed. Examines aggression in sport, gender differences, cultural diversity issues, and the use of sport psychology strategies.
- KHSS 341 Evaluation in Health and Physical Education** **3c-0l-3cr**
Prerequisite: Junior standing
 Evaluation theory, instructional objectives, and cognitive test construction; technical and practical considerations in testing and interpretation of test results in both health and physical education.
- KHSS 343 Physiology of Exercise** **3c-0l-3cr**
Prerequisites: Health and physical education, physical education and sport/exercise science, athletic training majors and a grade of "C" or better in KHSS 221 or C or higher in BIOL 150
 Physiological effects of exercise in humans. Major factors of diet, conditioning, physical fitness, maximum performance level, and fatigue.
- KHSS 344 Adapted Physical Activity and Sport** **3c-0l-3cr**
Prerequisites: KHSS 209 and one of the following: KHSS 221, 256, or BIOL 150
 Recognition of structural deviations, corrective exercises, physical activity, and sport for individuals with a wide range of disabilities
- KHSS 345 Survey of Orthopedic Injuries in Sport and Exercise** **3c-0l-3cr**
Prerequisites: Grades of "C" or better in KHSS 221 or BIOL 150, and KHSS 185
 A survey of common musculoskeletal injuries associated with participation in athletic activities, with emphasis on etiology, pathophysiology, and classification. General injury assessment and management procedures are also presented.
- KHSS 346 Preventive and Acute Care Skills in Athletic Training** **0c-2l-1cr**
Corequisite: KHSS 345
 Develops essential athletic training skills for the beginning and intermediate athletic training student. Emphasizes athletic taping and wrapping, open and closed wound care, vital signs and anthropometric measurements, immobilization and ambulation devices, protective equipment fitting, and transportation and transfer of the injured athlete.
- KHSS 347 Physiology of Exercise Laboratory** **0c-2l-1cr**
Corequisite: KHSS 343
 Laboratory experiences to illustrate physiological responses to exercise. Skills associated with the use of current laboratory equipment and techniques are developed. Supplements lecture-based content from KHSS 343.
- KHSS 349 Applied Pediatric Exercise Lab** **0c-2l-1cr**
Prerequisite: KHSS 343
 Provides physical education students with an understanding of pediatric exercise concepts, particularly exercise programming, physical fitness, and assessment, related specifically to physical education. Provides the opportunity to practice administering field-based assessments of physical fitness and designing safe activities and/or exercise programs to enhance health, fitness, or performance in youth.
- KHSS 350 Health Aspects of Aging** **3c-0l-3cr**
Prerequisites: PSYC 101, SOC 151 or 161, and junior standing
 Current theory and research related to gerontology are introduced to increase understanding of the physical and psychosocial dimensions of aging. Additionally, emphasizes lifestyle factors and disease prevention aspects of aging. Recommended for students who plan to work with older adults.
- KHSS 351 Managing Budgets and Technology in Sport** **3c-0l-3cr**
Prerequisites: KHSS 292, ECON 121, 122
 Provides information concerning the application of finance and accounting principles to managerial control of sport organizations. Examines current economic and financial issues that impact the sports industry. Topics include budget development, funding, capital projects, financial analysis, licensing, and economic impact studies related specifically to managing sport. Emphasizes specific software packages currently being used to manage sport organizations.
- KHSS 353 Driver Education Program Management** **3c-0l-3cr**
 Emphasizes the development, organization, and management of high school driver education from the standpoint of its historical development to its present programs designed to meet the demands of the highway transportation system. Special emphasis on the role of the teacher in conducting a high-quality program that meets with student, parent, school, and community approval.
- KHSS 354 Application of Driver Education Instructional Modes** **2c-2l-3cr**
Prerequisites: KHSS 251, 252, 353
 Prepares prospective driver education teachers to plan, teach, and evaluate the four modes of driver education (classroom, on-road, simulation, and

multiple-vehicle range). Teaching high school students in supervised laboratory sessions is provided.

KHSS 365 Orthopedic Injury Assessment in Athletic Training 3c-2l-4cr

Prerequisites: KHSS 345, 346

Teaches assessment procedures, evaluation methods, and proper athletic training protocol for neuromuscular and musculoskeletal injuries. In addition, administrative issues in athletic training are addressed emphasizing accurate medical documentation. Emphasizes subjective and objective assessment and documentation of findings.

KHSS 370 Adapted Health and Physical Education 3c-0l-3cr

Prerequisites: EDSP 102, KHSS 209; at least one of the following:

KHSS 214, 215, 216, 217, 218, 316

Introduces the educational issues and methods used to effectively instruct students with disabilities and other issues that become barriers to learning. Includes a study of current laws and guidelines regarding the legal rights of students with disabilities and their parents. Identifies low and high incidence of disabilities, recognitions of structural deviation, and corrective exercises. Introduces instructional adaptations to facilitate learning in the health classroom and gymnasium.

KHSS 375 Physiological Basis of Strength Training and Conditioning 3c-0l-3cr

Prerequisite: Grade of "C" or higher in KHSS 221 or BIOL 150

Provides the anatomical and physiological basis of muscle function.

Students also gain an understanding of changes that can be made through strength training and conditioning, along with knowledge of programs that will bring about these changes. Opportunities for working with various types of equipment are available.

KHSS 376 Athletic Training Clinical Practicum I 0c-3l-3cr

Prerequisites: KHSS 345, 346

Develops and demonstrates proficient psychomotor skills within the domains of athletic injury prevention and acute care, in coordination with a one-semester clinical field experience. Allows an opportunity to practice and apply skills taught under the direction of a preceptor within the IUP Athletic Department or an affiliated clinical site. Emphasizes specific skills such as those relating to safety/risk management, conditioning, equipment fitting, taping and wrapping, acute care, and transportation/transfer of the injured athlete. Restricted to students seeking eligibility to sit for the Board of Certification (BOC) for the Athletic Trainer examination.

KHSS 377 Athletic Training Clinical Practicum II 0c-3l-3cr

Prerequisites: KHSS 365

Develops and demonstrates proficient psychomotor skills within the domain of athletic injury assessment, in coordination with a one-semester clinical field experience. Allows an opportunity to practice and apply skills taught under the direction of a preceptor within the IUP Athletic Department or an affiliated clinical site. Emphasizes specific skills such as those relating to anatomical landmarks' identification, orthopedic evaluations, and neurological evaluations. Restricted to students seeking eligibility to sit for the Board of Certification (BOC) for the Athletic Trainer examination.

KHSS 380 Organization and Administration in Athletic Training 3c-0l-3cr

Prerequisite: KHSS 345 or instructor permission

Presents comprehensive instruction in such areas as health care administration; program, human, information, and resource management; and ethics and legal considerations in athletic training.

KHSS 385 General Medical Conditions in Athletic Training 2c-2l-3cr

Prerequisite: KHSS 345 or instructor permission

An overview of general health assessment and physical examination techniques related to the athletic population. A systemic approach is used to address issues related to the anatomy, pathology, physiology, and diagnostic testing of both general conditions and diseases of the human body.

KHSS 410 Exercise Prescription 3c-0l-3cr

Prerequisites: Physical education and sport/exercise science majors and KHSS 343 with a grade of "C" or better

Teaches individuals to write exercise prescriptions based on a subject's tolerance for physical activity. Special emphasis is on risk factors, techniques of evaluation, drugs, injuries, environmental factors, and motivation and their role in physical activity assessment.

KHSS 411 Physical Fitness Appraisal 3c-0l-3cr

Prerequisite: KHSS 343 with a grade of "C" or better

Involves the selection, administration, and interpretation of various tests for appraising the physical fitness levels of individuals. Information given concerning the various fitness components and discussions held so that each student gains an understanding of the variables to be tested.

KHSS 412 Physical Activity and Stress Management 3c-0l-3cr

Acquisition of necessary understanding of anxiety and stress, their nature, place in society, and intervention strategies as they relate to physical activity.

KHSS 413 Physical Activity and Aging 3c-0l-3cr

Prerequisite: KHSS 343 with a grade of "C" or better

Presents major aspects of physical activity, its importance to the older adult, and the organization of an activity program. Attention to physiology of physical activity, effects of activity on growth and aging, exercise prescription, flexibility, overweight and obesity, and motivational strategies.

KHSS 414 Exercise Electrocardiography 1c-1l-3cr

Prerequisites: Physical education and sport/exercise science majors and KHSS 343 with a grade of "C" or better

An introduction to the basic concepts of electrocardiography (ECG), including an understanding of electrophysiology, electrode lead placement, both rhythm strips and 12-lead interpretation. Utilizing electrocardiograms, students will also be able to recognize normal and abnormal rhythms, including those ECG abnormalities brought about by exercise. Normal and abnormal responses during Graded Exercise Testing are also interpreted.

KHSS 415 Lifestyle Behavior Management for Physical Activity 3c-0l-3cr

Prerequisites: KHSS 343 with a grade of "C" or better

Examines a variety of strategies necessary to modify health behavior with an emphasis on physical activity. Focus is placed on development of skills necessary to work with clients/patients in group leadership and group-process activities to assess and assist with behavior change for both the apparently healthy and those with multifaceted chronic disease as it relates to physical activity.

KHSS 416 Functional Training for Strength and Conditioning 3c-0l-3cr

Prerequisites: KHSS 343 and 375 with a grade of "C" or better

Focuses on comparing and contrasting the scientific principles associated with traditional strength training and functional strength training techniques. Examines a variety of new techniques found in the fitness and sport performance industry and provides practical experience in both traditional and functional strength training techniques.

KHSS 417 Contemporary Issues in School and Community Health 3c-0l-3cr

Provides pedagogical strategies relevant to educators in school and community health education settings. Assist students in identifying, analyzing, promoting, and evaluating recent developments and issues in health.

KHSS 420 Health Education and Promotion at the Workplace 3c-0l-3cr

Prerequisite: KHSS 325 or instructor permission

Addresses basic issues and problems in planning, implementing, and evaluating health education programming in a variety of school and worksite settings. Explores agencies and programs focused on advocacy of health education services. Emphasizes knowledge and practical skills required to become a certified health education specialist.

KHSS 426 Health Science Instruction 3c-0l-3cr Prerequisites: KHSS 316, 318 An overview of health curriculum with a focus on teaching methods and media of instruction. Includes unit development, opportunities for instruction, and guidelines for maintaining professional growth. Explores current research in teaching techniques, motivational strategies, and assessment of learning within a diverse population.	KHSS 465 Sport Management Capstone 3c-0l-3cr Prerequisites: KHSS 292, 320; 90cr completed The emphasis is on improving personal effectiveness in the work environment for sport managers. Students develop observational skills and survey techniques needed for the sport industry. Thinking critically, problem solving, and applying transformative change models are emphasized. Discipline-specific research articles are examined and critiqued. Prepares students to market their skills to the sport industry.
KHSS 437 Coaching Disability Sport 3c-0l-3cr Prerequisite: KHSS 209 or instructor permission Introduces developmentally appropriate practice when coaching individuals with disabilities. Emphasizes accessible and inclusive practices that promote full participation of individuals with various disabling conditions. Explores program planning and assessment in various disability sports and games. (Offered as KHSS 337 before 2016-17.)	KHSS 472 Epidemiology of Physical Activity 3c-0l-3cr Prerequisite: BIOL 301 Covers physical activity epidemiology from the evidence of the relationship between physical activity and chronic disease and the assessment of physical activity and/or sedentary behavior. Explores individual and population-based lifestyle intervention efforts to enhance health behavior and promote disease prevention in diverse populations.
KHSS 441 Psychosocial Implications for Health and Physical Education 3c-0l-3cr Prerequisite: Senior standing A study of psychological and sociological influences, both theoretical and empirical, and their effects on health and physical performance.	KHSS 476 Athletic Training Clinical Practicum III 0c-3l-3cr Prerequisites: KHSS 365, 385, 446 Develops and demonstrates proficient psychomotor skills within the domains of athletic training organization/administration and education/guidance, in coordination with a one-semester clinical field experience. Allows an opportunity to practice and apply skills under the direction of a preceptor within the IUP Athletic Department or an affiliated clinical site. Emphasizes specific skills such as those relating to communication, recordkeeping, planning, budgeting and purchasing, facility design, policies/procedures, and other athletic health care managerial/administrative duties. Athletic training instruction and guidance skills are also addressed. Restricted to students seeking eligibility to sit for the Board of Certification (BOC) for the Athletic Trainer examination.
KHSS 442 Senior Seminar: Professional Development in Health, Physical Education, and Sport 3c-0l-3cr Prerequisite: 90cr completed For majors of health and physical education and physical education and sport. Related to professional development issues and transition from college graduate to entry-level professional. Includes development of an electronic portfolio, assessment of postgraduation educational opportunities, and exploration of information literacy.	KHSS 477 Athletic Training Clinical Practicum IV 0c-3l-3cr Prerequisites: KHSS 446, 448 Develops and demonstrates proficient psychomotor skills within the domain of athletic injury rehabilitation, in coordination with a one-semester clinical field experience. Allows an opportunity to practice and apply skills under the direction of a preceptor within the IUP Athletic Department or an affiliated clinical site. Emphasizes specific skills such as exercise, manual therapy, and other advanced musculoskeletal screening and therapeutic intervention techniques. Restricted to students seeking eligibility to sit for the Board of Certification (BOC) for the Athletic Trainer examination.
KHSS 445 Business Practices in Sport 3c-0l-3cr Prerequisites: KHSS 292, 320 Focuses on the application of business practices to operate a successful sports organization. Topics emphasized are promotion in sport, sport marketing, financing a sports organization, sport sponsorships, sales practices, public relations strategies, and media interaction. The unique application to the sport industry is emphasized.	KHSS 480 Professional Issues in Athletic Training 3c-0l-3cr Prerequisites: KHSS 380, 476 Explores topics related to professional development and responsibility in athletic training. Examines current research findings in athletic training. Addresses preparation for the Board of Certification (BOC) examination.
KHSS 446 Therapeutic Modalities 3c-2l-4cr Prerequisite: KHSS 365 A basic introduction to the use of therapeutic modalities and the role they play in the rehabilitation of athletic injuries. Physical agents used in the care of athletic injuries are presented, highlighting the physiological effects of each modality, as well as indications and contraindications for their use.	KHSS 481 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.
KHSS 448 Therapeutic Exercises for Athletic Injury Management 3c-2l-4cr Prerequisites: KHSS 365, 375 The theoretical framework for athletic injury assessment and management of the injured athlete is discussed. A problem-solving approach to the selection and implementation of specific tests and development of skill in basic therapeutic exercise procedures for improving muscle performance, relaxation, and mobilization are included.	KHSS 482 Independent Study var-1-3cr Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.
KHSS 450 Curriculum and Programming in Sexuality Education 3c-0l-3cr Topics include anatomy and physiology of the human reproductive tracts, development, birth defects, contraception, venereal disease, and abortion. Not for credit toward degrees in biology.	KHSS 492 Health Fitness Instruction 3c-0l-3cr Prerequisites: Physical education and sport/exercise science majors only. Grade of "C" or better in all of the following: KHSS 285, 286, 315, 343, 375, and either KHSS 410 or 411. May only take KHSS 410 or 411 concurrently with 492. Students acquire the knowledge, skills, and abilities required to develop programs of physical activity and fitness for healthy adults and those with controlled disease. Experience in leading an exercise class and knowledge
KHSS 460 Law and Issues in Managing Sport 3c-0l-3cr Prerequisite: KHSS 292 Emphasizes the interaction between the legal system and the sport industry. Topics include liability risk management, contracts, torts, sports agents, dispute resolution, and product liability. A focus on the influence of Title IX, antitrust exemption, religion, drug testing, and ergogenic aids on sport operations. The evolution of NCAA compliance and the issues that social media has on managing sport are included.	

of functional anatomy and exercise physiology are also expected before participation in the class.

KHSS 493 Internship **var-3-12cr**

Prerequisites: Physical education and sport/exercise science, physical education and sport/sport administration, and athletic training majors, senior status or permission.

Integrates classroom experience with practical experience in community service agencies or industrial, business, or governmental organizations. Senior standing required.

KORE: Korean
Department of Foreign Languages
College of Humanities and Social Sciences

KORE 101 Elementary Korean I **4c-0l-4cr**

For beginning students. Introduces the Korean language, with attention focused on three modes of communication in present and past time frames: interpretive listening and reading, interpersonal speaking and writing, and presentational speaking and writing. Also imparts knowledge of Korean culture and society. Attendance is required. Students may not register for or take a D/F repeat in KORE 101 when credit has already been received for a higher numbered Korean course.

KORE 102 Elementary Korean II **4c-0l-4cr**

Prerequisite: KORE 101

A continuation of KORE 101. Focuses on communication through listening, speaking, reading, and writing. Students continue to learn to identify and write Korean characters. Builds on the three modes of communication—interpretive, interpersonal, and presentational—to build proficiency in using the Korean language in real-life situations. Also imparts knowledge of Korean culture and society. May not register for or take a D/F repeat in KORE 102 when credit has already been received for a higher-numbered KORE course.

KORE 201 Intermediate Korean **4c-0l-4cr**

Prerequisite: KORE 102

A continuation of KORE 102. Focuses on communication through listening, speaking, reading, and writing. Students continue to learn to identify and write complicated Korean vowels and consonants. Builds on the three modes of communication—interpretive, interpersonal, and presentational—to build proficiency in using the Korean language in real-life situations. Also imparts knowledge of Korean culture and society. Attendance is required. Students may not register for or take a D/F repeat in KORE 201 when credit has already been received for a higher-numbered KORE course.

LAS: Latin American Studies
College of Humanities and Social Sciences

LAS 281 Special Topics in Latin American Studies **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

LAS 350 The Mayas: Culture, Literature, and Numbers **3c-0l-3cr**

Explores the world of the ancient and modern Mayan civilization, developing student understanding of a culture that differs from modern society. Through discussion of and hands-on activities involving Mayan geography, religion, calendar, mathematics, food, writing, and literature, students develop an appreciation of the dimensions of Mayan culture, enabling them to make generalizations about modern cultural development.

LAS 480 Latin American Studies Seminar **3c-0l-3cr**

A multidisciplinary colloquium emphasizing reading, discussion, and writing on specialized topics related to Latin American society, culture, history, literature, politics, geography, economics, and business. Topics include, but are not limited to, the nature of pre-Columbian cultures; the effects of colonialism and independence on present-day Latin America; the relationship between Latin America and the United States, Africa, and Europe; and

the growing presence and significance of people of Hispanic descent in the United States. Open to all majors; required for Latin American studies minors.

LAS 481 Special Topics in Latin American Studies **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

LDSP: Leadership Studies
Eberly College of Business and Information Technology
and College of Humanities and Social Sciences

LDSP 361 Foundations of Leadership **3c-0l-3cr**

Introduces leadership by focusing on what it means to be a good leader and explores the practice and interplay of leadership with effective teamwork and communication. Examines topics such as the definition and nature of leadership, modern leadership theories, recognizing leadership/team traits, developing leadership/team skills, creating a vision, setting the tone, listening to team and out-group members, handling conflict, overcoming obstacles, and addressing ethics in leadership. Special attention is given to helping students understand and improve their own leadership performance. (Offered as LDSP 300 before 2017-18.)

LGBT: Lesbian, Gay, Bisexual, Transgender, and
Queer Studies
College of Humanities and Social Sciences

LGBT 200 Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies **3c-0l-3cr**

Introduces students to lesbian, gay, bisexual, transgender, and queer (LGBT&Q) studies as an interdisciplinary academic field; draws substantially on sociology, psychology, history, politics, religion; considers literary and media representations of the LGBT&Q populations and experiences. Focuses on the exploration of the cultural, social, historical, and political understandings of sexuality and gender marginality that have shaped identities in modern times. Addresses contemporary issues related to LGBT&Q individuals and communities and critically examines the meaning and representation of heterosexuality and gender normativity in relation to LGBT&Q experiences. Considers key intersections of sexual orientations, identities, and behaviors in relation to age, race, ethnicity, and social class.

LGBT 400 Queer Theory **3c-0l-3cr**

Familiarizes students with the scholarship and theories surrounding sexualities, sexual identities, and gender identities. Examines the literature and evidence on the ways in which social forces influence sexualities and gender (orientation, identity) as well as performance (how we humans act out our sexuality). Analyzes literatures on the diversity of non-hegemonic desires, behaviors, orientations, identities, and communities and related issues from a trans-historical, cross-cultural, and interdisciplinary perspective. Explores the ways human sexualities and gender identities are themselves social forces as societies respond to sexual variations in terms of identities such as gay, lesbian, bisexual, transgender, queer, questioning, and a range of heterosexualities.

LIBR: Library
The University Libraries
Academic Affairs Division

LIBR 151 Introduction to Information Literacy **1c-0l-1cr**

Information literacy is the ability to locate, evaluate, and use information effectively. These skills are essential to students while in college but also for success in their personal and professional lives after they have graduated. Students explore online, print, and non-print information resources and hone their information-seeking skills and knowledge as they relate to critical thinking, resource analysis, and the ethical and appropriate use of information and develop a base level of information literacy skills. (Titled Introduction to Library Resources before 2014-15.)

LIBR 152 Information Issues and Resources for the Health Sciences **1c-0l-1cr**

Prerequisite: Enrollment in one of the following programs: nursing and allied health professions; food and nutrition; kinesiology, health, and sport science; or public health

An in-depth look at how information is located and used in the health sciences, including a variety of traditional and non-traditional resources, as well as the cost of that information, the availability of misinformation, evaluation techniques for evidence-based practice, and the role of the Institutional Review Board (IRB) in health sciences research.

LIBR 201 Internet and Multimedia **3c-0l-3cr**

Prerequisite: BTED/COSC/IFMG 101 or prior exposure to word processing and electronic mail

Focuses on the evaluation of information and multimedia resources available on electronic networks when doing research in an area of one's choice. An information literacy course is for students to gain a more in-depth understanding of the information resources available electronically and of how to utilize them more effectively in communicating. Students learn how to access and utilize these resources for two-way communications and support for decision making while incorporating selected elements in multimedia presentations of their own design. (BTED/COMM/COSC/IFMG/LIBR 201 may be used interchangeably for D/F repeats and may not be counted for duplicate credit.)

LIBR 251 Information Access in the Digital Age **2c-0l-2cr**

An introduction to library research equips the student with information literacy skills so that the student is able to determine the extent of information needed; access the needed information effectively and efficiently; evaluate information and its sources critically; incorporate selected information into one's knowledge base; use information effectively to accomplish a specific purpose; understand the economic, legal, and social issues surrounding the use of information; and access and use information ethically and legally. Provides conceptual and practical expertise as an information networker to locate, evaluate, and use effectively the needed information. Basic knowledge of computer applications is helpful.

LIBR 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

MATH: Mathematics
Department of Mathematics
College of Natural Sciences and Mathematics

MATH 100 Intermediate Algebra **3c-0l-3cr**

Note: May not be taken after successfully completing MATH 105 or 110 or a calculus course without written Mathematics Department chairperson approval.

Basic course in algebra including factoring, exponents and radicals, systems of linear equations, complex fractions, and inequalities. For those students who lack the basic algebraic skills required in MATH 105 or 110. Will not meet Liberal Studies math requirements.

MATH 101 Foundations of Mathematics **3c-0l-3cr**

Introduces logic and a mathematical way of analyzing problems; develops an appreciation for the nature, breadth, and power of mathematics and its role in a technological society; introduces useful mathematics or mathematics related to student interests. Possible topics include logic, problem solving, number theory, linear programming, probability, statistics, intuitive calculus, introduction to computers, mathematics of finance, game theory.

MATH 105 College Algebra **3c-0l-3cr**

Prerequisite: MATH 100 or appropriate placement test score or permission of the Mathematics Department chairperson

Note: May not be taken after successfully completing either a calculus course or MATH 110 without written Mathematics Department chairperson approval.

Teaches students to appropriately analyze and interpret numerical, graphical, and algebraic representations to enable them to model complex situations using mathematical structures and increase their problem-solving skills. Particular focus is given to polynomial, exponential, and logarithmic functions in order to prepare students for further study in business calculus and/or statistics.

MATH 110 Elementary Functions **3c-0l-3cr**

Prerequisite: MATH 100 or appropriate placement test score or permission of the Mathematics Department chairperson

Note: May not be taken after successfully completing a calculus course without written Mathematics Department chairperson approval.

Prepares mathematics and science students for the study of calculus. Topics include detailed study of polynomial, exponential, logarithmic, and trigonometric functions.

MATH 115 Applied Mathematics for Business **3c-0l-3cr**

Prerequisites: MATH 105 or 110 or appropriate placement test score or permission of the Mathematics Department chairperson

Note: May not be taken after successfully completing a calculus course without written Mathematics Department chairperson approval.

A review of elementary functions, including logarithmic and exponential functions. Business majors are introduced to the central ideas of calculus (limit, derivative, and integral). Applications to business and economics are emphasized.

MATH 121 Calculus I for Natural and Social Sciences **4c-0l-4cr**

Prerequisite: MATH 105 or 110 or appropriate placement test score or permission of the Mathematics Department chairperson

Note: May not be taken after successfully completing a calculus course without written Mathematics Department chairperson approval.

A review of elementary functions, including logarithmic and exponential functions. Natural and social science majors are introduced to the central ideas of calculus, including limit, derivative, and integral. Applications to natural and social sciences are emphasized.

MATH 122 Calculus II for Natural and Social Sciences **4c-0l-4cr**

Prerequisite: MATH 121

Applications of integrals to natural and social sciences, functions of several variables, trigonometric functions, sequences and series, numerical methods, and differential equations.

MATH 125 Calculus I/Physics, Chemistry, Mathematics **3c-0l-3cr**

Prerequisite: MATH 110 or equivalent placement (algebra, geometry, and trigonometry)

The first of a three-semester sequence for math and science majors covering the theory of calculus and its application in problem solving. Topics include functions, limits, continuity, derivatives, application of derivative, integrals, and applications of the integral. (Trigonometric, exponential, and logarithmic functions are included.)

MATH 126 Calculus II/Physics, Chemistry, Mathematics **3c-0l-3cr**

Prerequisite: MATH 125 or the equivalent

The second of a three-semester sequence for math and science majors. Topics include techniques and applications of integration, sequences and series, convergence tests, Taylor polynomials, separable differential equations, vectors, and three-dimensional coordinates. (Trigonometric, exponential, and logarithmic functions are included.)

MATH 151 Elements of Mathematics I **3c-0l-3cr**

Prerequisite: Appropriate major: special education, speech and language pathology, deaf education, family and consumer sciences education, art education, child development and family relations, middle-level education 4-8, or early childhood education/special education.

Topics included are sets, concepts of logic, mathematical systems, systems of numeration, developing the set of integers, rational numbers, and real numbers.

MATH 152 Elements of Mathematics II 3c-0l-3cr Prerequisite: MATH 151 Topics included are organizing and analyzing data, statistics, probability, geometric shapes, measurement, congruence and similarity, coordinate geometry, and transformational geometry.	MATH 272 Introduction to Mathematical Proofs II 3c-0l-3cr Prerequisites: MATH 126 and 271 with a grade of “C” or better A further study of the basic ideas of contemporary mathematics. Topics include but are not limited to mathematical induction, cardinality of sets, relations, methods of proof in number theory, analysis, and algebra.
MATH 153 Elements of Algebra 3c-0l-3cr Prerequisite: MATH 151 Explores some of the basic algebraic concepts including the real number system and solving linear equations and inequalities with one and two variables. An emphasis will also be placed on studying the coordinate plane, exploring the slope of a line, graphing lines, and writing equations of lines. Connections are made with the teaching and learning of algebraic concepts in the elementary and middle schools.	MATH 281 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.
MATH 171 Introduction to Linear Algebra 3c-0l-3cr An introduction to vector spaces, linear transformations, determinants, and matrix algebra. Topics are presented in a direct and intuitive approach.	MATH 309 Discrete Mathematics 3c-0l-3cr Prerequisites: COSC 110 and MATH 121 or 125 Topics include set algebra, mappings, relations, semigroups, groups, directed and undirected graphs, Boolean algebra, and propositional logic, with examples and applications of these various areas of computer science. Emphasizes developing an intuitive understanding of basic structures rather than formal theories and influence of these topics on theory and practice of computing. (Offered as MATH 219 before 2016-17.)
MATH 214 Probability and Statistics for Business Majors 3c-0l-3cr Studies the methods of describing data, probability theory, discrete and continuous random variables, sampling distributions, estimation and tests of hypothesis for means, proportions, and variance, and simple linear regression and correlation.	MATH 317 Probability and Statistics for Elementary/Middle-Level Teachers 3c-0l-3cr Prerequisite: MATH 152 Introduces concepts of probability and statistics by exploring and discovering key ideas related to data analysis and making predictions. Appropriate technology is incorporated. Explores curricular materials, resources, and activities relevant to teaching diverse groups at the elementary/middle level.
MATH 216 Probability and Statistics for Natural Sciences 3c-0l-3cr Prerequisite: MATH 121 or 125 Frequency distributions, graphical representations of data, measures of central tendency and variation, correlation and regression, probability, probability distributions, and sampling distributions. Inferential statistics including confidence intervals and parametric and nonparametric tests of hypotheses. Emphasis is on applications in the natural sciences using graphing calculators and statistical software.	MATH 320 Mathematics for Early Childhood 3c-0l-3cr Prerequisites: MATH 152, ECED 200 Studies child-centered, activity-oriented mathematics programs for early childhood education (preK-grade 1). Focuses on helping children develop understanding and insight into basic concepts of mathematics through the use of manipulative materials.
MATH 217 Probability and Statistics 3c-0l-3cr Prerequisite: For non-mathematics majors Frequency distributions, measures of central tendency and variation, elementary probability, sampling, estimation, testing hypotheses, correlation, and regression. Emphasis is on applications in the social sciences using appropriate technology, as opposed to theoretical development of topics.	MATH 330 Teaching Mathematics in the Elementary School 3c-0l-3cr Prerequisites: MATH 152, ECED 280 Examines contemporary curriculum and methods of instruction used in elementary school mathematics (grades 2-4). Students become acquainted with books, materials, and other resources helpful to prospective teachers. Activities include experiences in teaching elementary school mathematics.
MATH 225 Calculus III/Physics, Chemistry, Mathematics 3c-0l-3cr Prerequisite: MATH 126 or the equivalent The third of a three-semester sequence for math and science majors. Topics covering the calculus of functions of several variables include vector functions and space curves, arc length, curvature, partial derivatives, gradients, areas and volumes in various coordinate systems, Lagrange multipliers, line integrals, Green’s Theorem, and applications of multiple integrals. (Trigonometric, exponential, and logarithmic functions are included.)	MATH 340 Principles of Secondary School Mathematics 3c-0l-3cr Prerequisite: MATH 271 Provides students with mathematics content and mathematical thinking they need to teach in secondary schools, as well as to connect the content learned in college mathematics courses with the secondary curriculum. Open to secondary mathematics education majors only.
MATH 250 Introduction to Numerical Methods 3c-0l-3cr Prerequisites: COSC 110, MATH 121 or 125 Algorithmic methods for function evaluation, roots of equations, solutions to systems of linear equations, function interpolation, numerical differentiation, and integration and use of spline functions for curve fitting. The focus is on managing and measuring errors in computation. Also offered as COSC 250; either MATH 250 or COSC 250 may be substituted for the other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.	MATH 341 Differential Equations 3c-0l-3cr Prerequisite: MATH 122 or 126 Emphasizes techniques of solution and applications of differential equations. Topics include first order equations, second order linear equations, systems of linear equations, and series solutions of differential equations. (Offered as MATH 241 before 2016-17.)
MATH 271 Introduction to Mathematical Proofs I 3c-0l-3cr Prerequisites: MATH 121 or 125; 171 Gives basic ideas necessary to prove results in mathematics. Includes but is not limited to logic of mathematics, basic methods of proof, algebra of sets, equivalence relations and partitions of sets, functions, and mathematical induction.	MATH 342 Advanced Mathematics for Applications 4c-0l-4cr Prerequisites: MATH 122 or 225; 341 Deals with the application of mathematics to problems of science. Emphasizes the three phases of such an application and the development of skills necessary to carry out each step: (1) translation of the given physical information to a mathematical model; (2) treatment of the model by mathematical methods; (3) interpretation of the mathematical result in physical terms. Topics include vector calculus, integral theorems, Fourier series, partial differential equations, and the Laplace transformation.

MATH 350 History of Mathematics 3c-0l-3cr Prerequisite: MATH 122 or 126 or instructor permission Development of the central concepts of mathematics from ancient times up to the development of calculus in the 17th century. Mathematical concepts are placed in historical perspective. The use of the history of mathematics as a pedagogical tool and its relationship to other sciences is addressed.	
MATH 353 Theory of Numbers 3c-0l-3cr Prerequisite: MATH 271 with a grade of "C" or better Divisibility, congruences, primitive roots, number theoretic functions, Diophantine equations, continued fractions, quadratic residues.	
MATH 355 Foundations of Geometry I 3c-0l-3cr Prerequisites: MATH 171, 271 with grades of "C" or better Studies various groups of transformations and geometries associated with these groups in the Euclidean plane. The Euclidean Similarity and affine and projective groups of transformations are studied.	
MATH 363 Mathematical Statistics I 3c-0l-3cr Prerequisites: MATH 216; 225 (may be taken concurrently) Probability theory necessary for an understanding of mathematical statistics is developed. Applications of set theory to models, combinations and permutations, binomial, Poisson and normal distributions, expected values, and moment generating functions.	
MATH 364 Mathematical Statistics II 3c-0l-3cr Prerequisite: MATH 363 Multivariate distributions, change of variable technique, chi-square distribution, estimation, confidence intervals, hypothesis testing, contingency tables, goodness of fit. Practical applications are used to aid in the development.	
MATH 371 Linear Algebra 3c-0l-3cr Prerequisites: MATH 171, 271 with a grade of "C" or better Vector spaces and linear transformations are studied in a theoretical setting. Also, canonical forms and multilinear algebra are studied.	
MATH 411 Univariate Data Analysis 3c-0l-3cr Prerequisite: MATH 214 or 216 or 217 or instructor permission An applied statistics course in descriptive statistics, statistical inference procedures, regression analysis, analysis of variance, and analysis of deviance. Inference procedures for population means and proportions are developed. Simple linear regression, multiple linear regression, one-way ANOVA, two-way ANOVA, Poisson regression, and logistic regression models are used to analyze data. Emphasizes the applied aspects of these statistical models and uses computer software for data analysis.	
MATH 412 Multivariate Statistics 3c-0l-3cr Prerequisite: MATH 214 or 216 or 217 or instructor permission An applied statistics course that focus on multivariate statistical methods. Research procedures on the relationship among variables, significance of group differences, prediction of group membership, and structure exploration are introduced. Factorial analysis of variance, analysis of covariances, multivariate analysis of variance and covariance, path analysis, factor analysis, and discriminate analysis are introduced and used to analyze data. Emphasizes the applied aspects of these statistical methods and uses computer software for data analysis.	
MATH 413 Methods of Teaching Mathematics at the Middle Level 3c-0l-3cr Prerequisites: MATH 152, MIDL 315 Examines the current curricula and methods of instruction used in middle-level classrooms. Follows an investigative approach to middle-level mathematics instruction through hands-on activities that are standards based. Explores methods of teaching in diverse classrooms and teaching students with special needs.	
MATH 416 Time Series Analysis 3c-0l-3cr Prerequisite: MATH 363 or 411 or ECON 356 or instructor permission Applied statistics course in the analysis and forecasting of time series data. Linear time series regression models, ARIMA models, SARIMA models, GARCH models, and spectral theory are used to examine time series data.	Emphasizes the applied aspects of these models. Computer software is used for data analysis. MATH 417 Statistical Applications 3c-0l-3cr Prerequisite: MATH 214 or 216 or 217 (for non-mathematics majors) Using computer programs, a wide array of statistical procedures for educational research workers is explored. Basic concepts of statistical inference and prediction are reviewed, including regression analysis and prediction, hypothesis testing, analysis of variance and covariance, and partial and multiple correlation. Emphasizes use of the computer and interpretation of computer printouts, along with understanding techniques employed. No computer knowledge is necessary. MATH 418 Sampling Survey Theory and Its Application 3c-0l-3cr Prerequisite: (For non-mathematics majors) MATH 214 or 216 or 217 Directed to the student who is or will be doing quantitative research, commissioning large-scale surveys, and evaluating the results. Sampling techniques and statistical principles underlying their use are introduced. Consideration to the practical problems associated with implementation. MATH 420 Patterns and Functions for Elementary/Middle-Level Teachers 3c-0l-3cr Prerequisite: MATH 152 Examines and develops expertise with sequences, patterns, and functions, including linear, quadratic, logarithmic, exponential, and trigonometric functions. Appropriate technology is incorporated. Explores curricular materials, resources, and activities relevant to teaching diverse groups at the elementary/middle level. MATH 421 Advanced Calculus I 3c-0l-3cr Prerequisite: MATH 272 with a grade of "C" or better A study of set theory, real number system, functions, topology of Cartesian space, sequences, convergence and uniform convergence, continuity, and uniform continuity. MATH 422 Advanced Calculus II 3c-0l-3cr Prerequisite: MATH 421 Includes the study of convergence sequences in R_n , global properties of continuity, uniform continuity, differentiation of R_n , Riemann integrals, and infinite series. MATH 423 Complex Variables 3c-0l-3cr Prerequisite: MATH 225 An introduction to the theory of functions of a complex variable. Topics included are elementary functions, analytic functions, conformal mapping, integration, series, and application. MATH 427 Introduction to Topology 3c-0l-3cr Prerequisite: MATH 272 with a grade of "C" or better A study of sets, functions, continuity, compactness, the separation axioms, and metric spaces; application of topology to analysis is demonstrated. MATH 430 Seminar in Teaching Secondary School Mathematics 3c-0l-3cr Prerequisites: Junior status (60cr or more), a declared major in mathematics education Prerequisite or Corequisite: EDUC 242 Provides insights into the teaching and learning of numbers and operations, algebra, geometry, measurement, probability, and statistics. Students become aware of and use the resources and methods of instruction for teaching mathematics at the secondary level. Must be taken within two semesters before student teaching. MATH 445 Deterministic Models in Operations Research 3c-0l-3cr Prerequisites: MATH 122 or 225; 171 An introduction to using the basic tools of solving deterministic models in operations research. Includes optimization techniques and applications such as linear programming, nonlinear and dynamic programming, transportation models, and network models. In addition, sensitivity analysis, duality,

simplex methods, and integer programming are discussed. Uses technology to solve problems and interpret the results.

MATH 446 Probabilistic Models in Operations Research 3c-0I-3cr

Prerequisites: MATH 122 or 225; 171; 216

A survey of probabilistic methods for solving decision problems under uncertainty. Probability review, decision theory, queuing theory, inventory models, and Markov chains are covered. Uses technology to solve problems and interpret the results.

MATH 447 Modeling and Simulation 3c-0I-3cr

Prerequisites: MATH 122 or 126; 171; 216

Construction and solution of mathematical models. Emphasizes applications in areas such as logistics, natural and social sciences, and manufacturing. Discrete and continuous system models are analyzed using mathematical and computer-based methods. An introduction to computer simulation. An introductory course in differential equations is recommended but not required.

MATH 448 Introduction to Financial Mathematics 3c-0I-3cr

Prerequisites: MATH 115 or 125 or 121; and MATH 214 or 216 or 217

A rigorous mathematical treatment of the theory associated with financial transactions is undertaken. Geometric series and other concepts are used to construct mathematical models for analytically pricing various financial securities based on the time value of money. Studies how to construct mathematical models for pricing cash flows and explores the equivalency of different cash flows. Includes a detailed study of interest theory and financial economics. Prepares students for the Society of Actuaries Financial Mathematics (FM) exam.

MATH 450 Topics in Applied Computational Mathematics 3c-0I-3cr

Prerequisites: MATH 171, 225, and COSC/MATH 250 or instructor permission

Focuses on using computational methods to solve applied mathematics problems. Content varies from year to year. Students gain experience in solving practical problems, using various mathematical software packages, giving oral presentations, preparing technical reports, reading field-related journals, and integrating scientific visualization.

MATH 456 Geometry for Elementary/Middle-Level Teachers 3c-0I-3cr

Prerequisite: MATH 152

Students become acquainted with an informal, intuitive approach to geometry. Activities and materials for teaching geometrical concepts to children are an integral part of the course.

MATH 457 Number Theory for Elementary/Middle-Level Teachers 3c-0I-3cr

Prerequisite: MATH 152

An introduction to topics of elementary number theory including divisibility, prime numbers, factorization, binary numbers, modular arithmetic, identification codes, cryptography, Diophantine equations, Euclidean algorithm, and alternative algorithms. Explores curricular materials, resources, and activities relevant to teaching number theory at the elementary/middle level.

MATH 458 Logic and Logical Games for Elementary/Middle-Level Teachers 3c-0I-3cr

Prerequisite: MATH 152

Basic ideas, terminology, and notation of mathematical logic as well as games of strategy that involve logic. Engages in methods of reasoning and proof in games and in mathematics content. Explores curricular materials, resources, and activities relevant to teaching logic and reasoning at the elementary/middle level.

MATH 459 Technology in Elementary/Middle-Level Mathematics Instruction 3c-0I-3cr

Prerequisite: MATH 152

Develops the knowledge, skills, and perspectives required for using educational technology in teaching mathematics at the elementary/middle level. Hands-on experiences with technology are an important focus.

MATH 460 Technology in Mathematics Instruction 3c-0I-3cr

Prerequisites: COSC 110 or 108, junior status, mathematics education major or instructor permission, and completion of EDUC 242 with grade of "C" or better

Laboratory based and designed to provide preservice mathematics teachers with expertise in instructional technology for teaching mathematics at the secondary level. A strong emphasis is placed on the integration of pedagogy and subject matter knowledge. Must be taken within two semesters before student teaching.

MATH 461 Discrete Mathematics for Elementary/Middle-Level Teachers 3c-0I-3cr

Prerequisite: MATH 152

Topics in discrete mathematics, including systematic counting, graph coloring, networks, and their applications, as well as the historical background and the role of discrete mathematics in today's world. Uses a problem-solving, hands-on approach to content. Explores curricular materials, resources, and activities relevant to teaching discrete mathematics at the elementary/middle level.

MATH 471 Algebra for Elementary/Middle-Level Teachers 3c-0I-3cr

Prerequisite: MATH 152

Topics include multiple representations of sequences, integers, expressions, equations, systems of equations, inequalities, and matrices. Representations of expressions and equations are explored through the use of hands-on and visual aids and with appropriate technology. Connections are made with the teaching and learning of algebraic concepts at the elementary/middle level.

MATH 476 Abstract Algebra I 3c-0I-3cr

Prerequisite: MATH 272 with a grade of "C" or better

Development of theory of integral domains, fields, rings, and groups; designed to develop student's power to think for himself or herself and to improve ability to construct formal proofs.

MATH 477 Abstract Algebra II 3c-0I-3cr

Prerequisite: MATH 476

Continues study of algebra by use of axiomatic method; Euclidean domains; polynomial domains and extension fields included; interrelationships between these structures and simpler structures, particularly groups and rings, are developed as in study of Galois group of a polynomial and in an introduction to Galois theory.

MATH 480 Senior Seminar 3c-0I-3cr

Prerequisite: Senior standing (90 or more credits)

Assesses the effectiveness of the mathematics curriculum and provides mathematics majors with a culminating mathematical experience. Also focuses on synthesizing mathematics skills while researching, developing, and presenting a mathematical topic. Students solve practical problems, use various mathematical software packages, give oral presentations, and prepare technical reports.

MATH 481 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

MATH 493 Internship in Mathematics var-3-12cr

Prerequisites: Completion of core curriculum, completion of application Positions with participating companies or agencies provide students with experience in mathematics-related work under the supervision of the agencies and faculty. Requirements include one to three on-site consultations,

two university consultations, completion of progress reports, and presentation of final cumulative paper. Internship credit may not be used in fulfilling mathematics major course requirements.

MEDT: Clinical Laboratory Science
Department of Nursing and Allied Health Professions
College of Health and Human Services

MEDT 494 Clinical Microbiology **var-6-10cr**

Identification and clinical pathology of bacteria, fungi, viruses, and parasites. Techniques to isolate, stain, culture, and determine antimicrobial susceptibility. Instrumentation; quality control.

MEDT 495 Clinical Chemistry **var-7-10cr**

Enzymology, endocrinology, biochemistry of lipids, carbohydrates, and proteins; metabolism of nitrogenous end products; physiology and metabolism of fluids and electrolytes; and toxicology as related to the body and diseases. The technical procedures include colorimetry, spectrophotometry, electrophoresis, chromatography, automation, and quality control.

MEDT 496 Clinical Hematology/Coagulation **var-4-7cr**

The composition and function of blood; diseases related to blood disorders; the role of platelets and coagulation. Manual and automated techniques of diagnostic tests for abnormalities.

MEDT 497 Clinical Immunohematology **var-3-6cr**

Blood antigens, antibodies, crossmatching, hemolytic diseases, and related diagnostic tests. An in-depth study of blood donor service and its many facets such as transfusions, medico-legal aspects, etc.

MEDT 498 Clinical Immunology/Serology **var-2-4cr**

Immune response, immunoglobulins, autoimmunity, and complement and related tests and diseases. Survey and demonstration of serological diagnostic tests.

MEDT 499 Clinical Seminar **var-0-6cr**

Other courses that are not included in the above (such as orientation, laboratory management, education, clinical microscopy) and/or are unique to the individual hospital program.

MGMT: Management
Department of Management
Eberly College of Business and Information Technology

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

MGMT 105 Introduction to Business **3c-01-3cr**

An introduction to business, emphasizing critical issues affecting the business world, such as globalization, technology, ethics, and diversity. An overview of the various functional areas of business, it provides an understanding of the need for integration of those functional areas for success in business. Stresses experiential learning, develops team building skills, strengthens oral and written communication skills, and provides for personal interaction with university faculty. An introduction to career opportunities and curriculum choices in business. (Offered as BTST 105 before 2014-15.)

MGMT 275 Introduction to Entrepreneurship **3c-01-3cr**

Prerequisite: Sophomore status

Entrepreneurship is defined, common myths discussed, and basic characteristics of entrepreneurs identified and reviewed. Includes topics such as psychology of entrepreneurship, economic and social aspects of entrepreneurship, history, techniques of purchasing a company, new venture initiation, and risk taking.

MGMT 300 Human Resource Management **3c-01-3cr**

Prerequisite: PSYC 101

Recognizes and evaluates the application of behavioral science approaches in the study of human resource management. Includes recruiting and selec-

tion, training, management development, performance evaluation, communications, wage and benefit programs, and management-labor relations.

MGMT 310 Principles of Management **3c-01-3cr**

Provides an in-depth identification and understanding of the relevant theories, concepts, and principles underlying the management function.

MGMT 311 Human Behavior in Organizations **3c-01-3cr**

Prerequisite: PSYC 101

Focuses on human problems of management. Presents basic ideas and theories from the behavioral sciences as they apply to human behavior in organizations. Emphasizes management solutions to problems resulting from individual-organization interaction.

MGMT 325 Small Business Management **3c-01-3cr**

Prerequisite: MGMT 275 or junior standing

A survey course emphasizing aspects of small business management not covered elsewhere in the student's program. Key topics include real estate, site selection, and facilities management; purchasing management, vendor relations, and inventory systems; plant security, loss control, risk and insurance management; human resources management, employee benefits, motivation, and leadership; small business market research, customer services management, and pricing. A review of other elements of the small firm's milieu is included as a necessary contextual element (e.g., planning, accounting, financing, law).

MGMT 330 Production and Operations Management **3c-01-3cr**

Prerequisites: MATH 115, 214, junior standing, Eberly College of Business and Information Technology or approved major

A study of converting an organization's inputs into outputs whether in goods-producing or service industries. An overview of concepts, tools, and techniques used in management of the production and operations function in organizations.

MGMT 350 International Business **3c-01-3cr**

Prerequisite: MGMT 310

Studies the international dimensions of business and the critical environmental and organizational factors that affect managerial approaches in the international arena. Focuses on the management problems stemming from the movement of goods, human resources, technology, finance, or ownership across international boundaries. (Also offered as MKTG 350.)

MGMT 400 Compensation Management **3c-01-3cr**

Prerequisite: MGMT 300

Studies the policies and programs that help managers design and administer compensation systems for private and public sector enterprises. Includes motivation theories and practice designing of compensation systems.

MGMT 401 Management Development and Training **3c-01-3cr**

Prerequisites: MGMT 300, 310

Principles, problems, and procedures in planning, organizing, directing, and controlling all aspects of training and development programs in a business enterprise. Methods of improving and development of managerial skills are emphasized.

MGMT 402 Seminar in Human Resource Management **3c-01-3cr**

Prerequisites: MGMT 300, graduating senior

An integrative course in human resource management. Considers current issues in human resource management literature and contemporary topics in the human resource management field using case studies.

MGMT 403 Small Business Planning **3c-01-3cr**

Prerequisites: BTED/COSC/IFMG 101, MGMT 325

Integrates the content of much of the business core and relates it to the business planning for small businesses and entrepreneurial efforts. Introduces the concepts that support the development of an effective business and marketing plan.

MGMT 405 Organizational Staffing **3c-01-3cr**

Prerequisites: MATH 214, MGMT 300

Focuses on the "staffing" or "employment" subsystem of the human resource management function and deals with the theoretical, technical,

administrative, and legal issues involved in the recruitment, selection, placement, transfer, and promotion of individuals by organizations. Includes human resource planning, job analysis, job descriptions and specifications, recruitment and selection process, equal employment opportunity and affirmative action, reliability and validity of selection instruments and techniques, and contemporary issues in selection.

MGMT 428 Seminar in Management **3c-0l-3cr**
Prerequisite: MGMT 310

An integrative course in management. Considers current literature in the field and contemporary issues in management using case studies.

MGMT 432 Business and Society **3c-0l-3cr**
 An overview of the interactions between business and the larger social system in which it operates. Considers the problems, solutions, and future directions of societal issues and their relationships to the business environment. Topics discussed include consumerism, the morality of advertising, self-regulation, pollution and ecology, overpopulation, government regulation, and the social and ethical responsibilities of business and industry. (Also offered as MKTG 432; may not be taken for duplicate credit.)

MGMT 434 Quality Management **3c-0l-3cr**
Prerequisite: MATH 214

Emphasizes the philosophy that quality is an organization-wide phenomenon that influences every aspect of its operations. An overview of current quality management philosophies and tools and techniques for managing quality in any organization.

MGMT 437 Supply Chain Management **3c-0l-3cr**
Prerequisite: MGMT 330

Deals with the design and evaluation of supply chain systems with a focus on strategic and technological issues. These concepts are developed through exploration of contemporary practices, case studies, and research, as well as analytical frameworks of supply chain management. Theoretical and practical understanding of manufacturing and service planning and control, including systems modeling, purchasing and sourcing, logistics, strategic alliances, inventory management, scheduling, etc. Manufacturing and service technologies and trends are also emphasized. Computer applications are used for understanding the interrelationships between various components of operations system.

MGMT 440 Introduction to Energy Management **3c-0l-3cr**
Prerequisite: Junior standing

Introduction to the global energy markets and business with a particular emphasis on hydrocarbon based resources including petroleum, natural gas, and coal resources. Also includes exposure to nuclear, hydroelectric, solar, wind, and other "alternative" energy technologies.

MGMT 451 International Management **3c-0l-3cr**
Prerequisite: MGMT 310

Focuses on the complex role of multinational corporations (MNCs) in today's global economy. Offers an in-depth perspective on planning, organization structure, managerial decision making, and human resource management in global structures and differences between MNCs and domestic organizations. Reviews research in the field, including current issues, trends, and practices.

MGMT 452 Comparative Management **3c-0l-3cr**
Prerequisite: MGMT 310

An intensive, comparative study of management and organization across the globe. A variety of comparative management systems, models, and theories are presented, and research findings are examined.

MGMT 454 International Competitiveness **3c-3l-3cr**
Prerequisite: MGMT 310

Focuses on how nations and firms seek to improve or sustain their competitive positions in a changing global marketplace. Explores a wide range of contemporary topics such as global economic challenges and trade interdependence, emerging forms of business organizations, and the logic for competing globally. Environments are addressed. Examines various theories, models, and cases dealing with competitive advantage.

MGMT 459 Seminar in International Management **3c-0l-3cr**
Prerequisites: MGMT 310, senior standing

An analysis of recent literature and developments related to global business issues such as strategic alliances, human resource management in global environments, global assignments, Japanese business system, and multinational corporations in the world economy.

MGMT 461 Business Leadership Theory **3c-0l-3cr**
Prerequisite: Junior standing or instructor permission

Introduces the various leadership styles such as autocratic, laissez-faire, transformational, transactional, visionary, and others as they relate to today's global business/corporate environment. These styles and their effectiveness as well as examples of application are discussed.

MGMT 462 Applied Business Leadership Skills **3c-0l-3cr**
Prerequisites: Junior standing, MGMT 461 or instructor permission

Focuses on current leadership styles and applications in business. The effectiveness of these styles is critically examined and evaluated with a cross-culture emphasis. Advanced, innovative, and exploratory business leadership topics and their effect on the behavior of employees, cooperation, and productivity are discussed.

MGMT 472 Organizational Entrepreneurship **3c-0l-3cr**
Prerequisite: MGMT 275 or 310

Explores the theories related to intrapreneurship and managing innovation and technology. Theory based but practice oriented. Through case discussions, students learn how to apply the analytical tools of strategic management and organizational theory to address important challenges faced by today's managers.

MGMT 481 Special Topics in Management **var-1-3cr**

Covers advanced, innovative, or exploratory topics and disciplines within management. Specific content items developed by instructor. Credits may be applied to either required (by permission of department chairperson) or free electives in a student's program.

MGMT 482 Independent Study **3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
 Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member. Approval based on academic appropriateness and availability of resources.

MGMT 492 Small Business/Entrepreneurship Internship **var-3-12cr**

Prerequisites: MGMT 403, permission of department chairperson, 2.75 cumulative GPA, all other requirements of the Eberly College of Business and Information Technology

Involves practical entrepreneurial experience of on-site consulting with small business firms. Students generally work for a semester on functionally related topics in accounting, finance, marketing, and MIS or on general topics such as business planning, forecasting, policy, and general management.

MGMT 493 Management Internship **var-3-12cr**

Practical experience to develop knowledge and skills in the application of theory to actual problems in a nonclassroom setting. A maximum of 3cr of internship in the student's major may be applied toward the management and human resource management major area elective requirements. Additional internship credit must be used as free electives only. Admission only by permission of the department chairperson and dean, Eberly College of Business and Information Technology.

MGMT 495 Business Policy **3c-0l-3cr**

Prerequisites: Completion of all business core requirements; graduating seniors

A capstone case analysis course that gives practice in applying business theories to the solution of management problems. An analysis of how top management determines strategy and policy and influences the philosophy and character of the company. Develops a general management viewpoint that integrates the various functions of the organization.

MIDL: Middle-Level Education
Department of Professional Studies in Education
College of Education and Communications

MIDL 221 Literature for Middle Level 3c-0l-3cr

Prerequisite: Admission into Teacher Education Step 1
 A survey of children's literature for middle-level students and examines the role of motivation in developing lifelong readers. Selection and evaluation criteria for each genre, including multicultural literature, are developed and applied. Classroom application and extensions of literature are explored, and current issues in the field of literature for middle-level learners are examined. Appropriate adaptations for resistant readers, students with exceptional needs, and students who are learning English are explored.

MIDL 222 Reading Instruction and Assessment in Grades 4-8 3c-0l-3cr

Prerequisites: Admission into Teacher Education Step 1; middle-level education 4-8 major
 Provides preservice teachers with various strategies, techniques, and materials related to teaching reading in grades 4 through 8. Current research and practical applications are interwoven to ensure a systematic coverage of the most recent methods and best practice for diverse students in grades 4 through 8.

MIDL 310 Instructional Theory and Planning for the Middle Level 3c-0l-3cr

Prerequisites: Admission into Teacher Education Step 1; middle-level education 4-8 major
 Competencies specific to the art and science of teaching adolescents are introduced with a focus on academic, social, and emotional developmental characteristics of young adolescents as they transition to the middle school. Familiarizes students with the fundamentals of middle-level learning and teaching theory and correspondingly appropriate models of teaching. Planning for instruction is evidenced through the development of lesson and unit plans that reflect utility in inclusive and diverse settings.

MIDL 311 Social Studies Instruction and Assessment in Grades 4-8 3c-0l-3cr

Prerequisite: Junior status (60cr or more)
 An overview of social studies methods instruction in the middle school classroom. Includes the study of objectives, trends, patterns and principles of organization, and techniques of instruction as it relates to social studies content areas: geography, Pennsylvania history, United States and world history, economics, and civics and government. Instruction includes assessment strategies for diverse middle school learners in inclusive classroom settings.

MIDL 312 Science Instruction and Assessment in Grades 4-8 3c-0l-3cr

Prerequisites: Admission into Teacher Education Step 1; BIOL 103, GEOS 101/102, SCI 105 all strongly recommended
 Emphasizes science as it relates to middle school students and curriculum, planning for teaching science, and recent innovations in science teaching.

MIDL 315 Classroom Management and Adolescent Development 3c-0l-3cr

Prerequisite: Junior status (60cr or more)
 For middle-level education 4-8 majors to create a professional classroom management plan that supports the healthy development of all young adolescents in a diverse middle school environment. Students discuss, analyze, and apply major concepts, principles, theories, and research related to young adolescent development, including adolescents with special needs and English language learners.

MIDL 321 21st-Century Literacies for Diverse Learners 3c-0l-3cr

Prerequisite: MIDL 222
 Teaches the impact of technology in the field of literacy. Addresses issues and trends related to the use of technology. Includes technology integration in the curriculum and the incorporation of appropriate technologies to support diverse learners.

MIDL 408 Literacy in the Content Areas 3c-0l-3cr

Prerequisite: MIDL 222
 Provides preservice teachers with various strategies, techniques, and materials related to teaching reading and writing in various content areas. Current research and practical applications are interwoven to assist teachers in the development of successful methods for comprehending text in science, social studies, health, English, and mathematics. For undergraduate students as a special elective or as a required course for majors in middle-level education with a specialization in English/language arts.

MIDL 422 Diagnostic and Remedial Reading 3c-0l-3cr

Prerequisite: Teacher Education Step I
 Helps educators identify causes of reading disability in middle-level learners. Methods of diagnosis, procedures, and materials for remedial work are discussed. Strategies to improve students' content acquisition are included through both group and individual remediation. For undergraduate students seeking certification for middle-level education with a specialization in English/language Arts.

MIDL 425 Methods of Teaching Language Arts in Grades 4-8 3c-0l-3cr

Prerequisite: MIDL 222 with a grade of "C" or better
 Emphasizes the view that the art of communication is an interrelated process, and the task of the middle grades teacher is to integrate the language arts throughout the entire curriculum. Techniques for teaching oral and written communication skills, listening, viewing, and visually representing are presented. Other integral components include spelling instruction to meet the developmental needs of middle-level learners and methods for increasing vocabulary growth. Special emphasis is given to recent trends and research in middle grades education.

MKTG: Marketing
Department of Marketing
Eberly College of Business and Information Technology

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

MKTG 320 Principles of Marketing 3c-0l-3cr

Prerequisite: ECON 122
 A study of those activities necessary to the design, pricing, promotion, and distribution of goods and services for use by organizations and ultimate consumers.

MKTG 321 Consumer Behavior 3c-0l-3cr

Prerequisites: MKTG 320, PSYC 101
 A survey of noteworthy contributions of behavioral science and research on consumer purchasing and decision-making process, with particular attention to formal and informal influence patterns.

MKTG 350 International Business 3c-0l-3cr

Prerequisite: MGMT 310
 A study of the international dimensions of business and the critical environmental and organizational factors that affect managerial approaches in the international arena. Focuses on the management problems stemming from the movement of goods, human resources, technology, finance, or ownership across international boundaries. (Also offered as MGMT 350; may not be taken for duplicate credit.)

MKTG 351 Self-Marketing 1c-0l-1cr

Prerequisite: Junior status (as per credits earned)
 Focuses on the development of both long-term and short-term self-marketing plans and self-marketing packages. Theories of managerial marketing, professional selling, market research, and advertising applied to self-marketing to prepare students to seek internship experience.

MKTG 420 Marketing Management 3c-0l-3cr Prerequisites: MKTG 320, 321, junior standing An analysis of marketing and operational problems and policies involved in planning, organizing, coordinating, and controlling a total marketing program.	MKTG 440 Direct Marketing 3c-0l-3cr Prerequisite: MKTG 320 An introduction to the role and nature of direct marketing, including its current theory and practice. Topics include designing and implementing direct mail marketing, telemarketing, catalog marketing, e-mail marketing and Web/Internet based direct marketing for consumer and industrial markets. Case studies and applications are utilized. Social, public policy, and legal issues in direct marketing are also explored.
MKTG 421 Marketing Research 3c-0l-3cr Prerequisites: MKTG 320, MATH 214 Nature, methods, analysis, and application of present-day marketing research techniques utilized in the solution of practical marketing problems.	MKTG 441 Export Marketing 3c-0l-3cr Prerequisite: MKTG 320 Students conduct an export feasibility analysis of a consumer/industrial item for a foreign market. Focus is on strategic and procedural aspects of export marketing.
MKTG 430 International Marketing 3c-0l-3cr Prerequisite: MKTG 320 International marketing and markets are analyzed. Special consideration is given to the significance of government regulations, organization structures of export and import enterprises, and credit policies.	MKTG 442 Social Cause Marketing for Nonprofit Organizations 3c-0l-3cr Prerequisite: MKTG 320 or instructor permission Prepares managers of nonprofit organizations and those whose mission is to plan and implement strategies for social change in society. Topics and activities will focus on strategic and tactical marketing approaches and planning and organizing for effective control of market performance of nonprofit organizations and programs.
MKTG 431 Business-to-Business Marketing 3c-0l-3cr Prerequisite: MKTG 320 Concerned with the major activities involved in the marketing of industrial goods and services, including the industrial marketing system, marketing information needs of the industrial firm, industrial marketing implementation and control, and channel, pricing, product, and promotional strategies for industrial goods.	MKTG 443 New Product Design and Branding 3c-0l-3cr Prerequisite: MKTG 320 Discusses the new product design, development, branding, and launch process companies use to bring a new concept to market by satisfying customers' unmet needs. Blends the perspectives of marketing and design and the process of product creation. A step-by-step process from product planning and concept generation to commercialization and product launch planning is covered.
MKTG 433 Advertising 3c-0l-3cr Prerequisite: MKTG 320 An introduction to the principles, practices, and creations of advertising. Use of various media and legal, economic, social, and ethical aspects of advertising are also considered.	MKTG 444 Green Marketing 3c-0l-3cr Prerequisite: MKTG 320 Entails a diverse perspective to understanding the impact of human consumption on the environment and development of marketing strategies to improve the human-environment interaction through creation, communication, and delivery of superior value and customer relationship management.
MKTG 434 Marketing Logistics 3c-0l-3cr Prerequisites: Junior/senior standing, MKTG 320, MGMT 330 Focuses on planning, organizing, and controlling the marketing logistics function. In addition to the acquisition and application of management science methods, students integrate and apply previously gained knowledge to analyze and solve complex marketing logistics problems. Areas of major concentration include facility location, transportation, inventory management, and customer service.	MKTG 445 Social Media Marketing 3c-0l-3cr Prerequisite: MKTG 320 or equivalent Explores the online marketing activities, practices, and interactions of individuals and organizations using conversational electronic media. Assorted social media interactive networking tools and applications are examined. Students study and develop social media marketing programs.
MKTG 435 Professional Selling and Sales Management 3c-0l-3cr Prerequisite: MKTG 320 Introduces the role and nature of modern personal selling in marketing. Theory and practice of personal selling process, sales planning, delivering sales presentations, and relationship marketing are emphasized. Basics of managing sales force including territory management, recruiting, training, and compensating sales force are also covered.	MKTG 446 Marketing Ethics 3c-0l-3cr Prerequisite: MKTG 320 Applies major ethical theories to marketing problems, focuses on resolving dilemmas and vested interests of primary and secondary stakeholders, and addresses ethical issues of importance to marketing managers. Various topics cover ethical issues in relation to strategic planning, marketing research, product, pricing, distribution, and promotion decisions. Also discusses issues concerning digital ethical marketing, marketing ethics in global context, and managing and leading ethical marketing systems.
MKTG 436 Retail Management 3c-0l-3cr Prerequisite: MKTG 320, junior standing Introduces students to all facets of retailing, including the history of retailing, retail theories, and decision making in retailing framework.	MKTG 448 Brand Design 1.5c-2l-3cr Prerequisite: MKTG 320 An integrated study of branding concepts in marketing and art, including aesthetics in commercial art, design of brand and corporate identity trademarks, theories of brand marketing and business strategy, customer touchpoints in brand communication and branding as a corporate strategy. (Also offered as ART 448; may not be taken for duplicate credit.)
MKTG 437 Services Marketing 3c-0l-3cr Prerequisite: MKTG 320 Focuses on current theories and applications of marketing techniques in the fast-growing area of services in the business, government, and nonprofit sectors. Emphasizes characteristics of services and their marketing implications and formulation and implementation of marketing strategies for service firms.	MKTG 450 Marketing Strategy 3c-0l-3cr Prerequisite: MKTG 320; senior standing Develops marketing and business decision-making skills to evaluate real-world business situations, analyzes marketing problems and scenarios, and produces solutions in the form of marketing and business strategies. Involves analyses based on quantification of marketing decisions and
MKTG 439 Internet Marketing 3c-0l-3cr Prerequisite: MKTG 320 Presents a strategic framework for developing marketing strategies on the Internet. Extends the marketing mix framework to e-commerce using current theories and applications in online product, online pricing, web-based marketing communication, and distribution strategies. Other topics include marketing research on the Internet, electronic retailing, Internet-based customer relationship management, and legal-ethical dimensions of e-marketing. Students use Internet-based, online marketing cases.	

problem-solving scenarios using exercises and in-depth case studies that develop analytical reasoning. This senior-level course integrates knowledge of marketing and other business management functions into marketing strategy development, implementation, and control using either a marketing plan or marketing simulation exercises. Readings on classic and emerging issues provide applied perspectives of marketing in the business environment.

MKTG 481 Special Topics **var-I-3cr**

Prerequisite: As appropriate to course content

Covers advanced, innovative, or exploratory topics and disciplines within marketing. Specific content items developed by instructor. Credits may be applied to either required (by permission of department chairperson) or free electives in a student's program. Special topics numbered 481 are primarily for upper-level undergraduate students.

MKTG 482 Independent Study **var-3cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost. Approval is based on academic appropriateness and availability of resources.

Individual research and analysis of contemporary problems and issues in a concentrated area of study under the guidance of a senior faculty member.

MKTG 493 Marketing Internship **var-3-12cr**

Practical experience in the marketing field to develop knowledge and experience in the practical application of theory to actual problems in a non-classroom situation. A maximum of 3cr of internship in the student's major may be applied toward the marketing major-area elective requirements. Additional internship credit must be used as free electives only. Admission only by permission of the department chairperson and the dean, Eberly College of Business and Information Technology.

MLSC: Military Science
Department of Military Science
Academic Affairs Division

MLSC 101 Introduction to Military Science **2c-11-2cr**

A study of the organization of the United States Army and the role of the military in today's society. Emphasizes the customs and traditions of the service, the Total Army concept, and the fundamentals of leadership. Includes instruction in basic military skills, land navigation, and personal nutrition and fitness. Also, see Leadership Laboratory.

MLSC 102 Fundamentals of Military Science **2c-11-2cr**

The study of the basic knowledge regarding military service and the profession of arms. Emphasizes basic military skill, first aid, and the development of leadership abilities through practical exercises. Includes instruction on offensive and defensive tactics, the Army writing style, and military briefings. Also, see Leadership Laboratory.

MLSC 191, 192, 291, 292, 391, 392, 491, 492 **0c-3I-1cr**
Army ROTC Physical Fitness Development I-VIII

Prerequisite: MLSC students only

Principles of individual and group physical fitness through the planning and execution of fitness training for all participating students. Primarily hands-on, performance-oriented training. Students are challenged with scheduling and executing PRT programs that ensure their future soldiers and units are prepared to successfully perform their wartime mission. This curriculum instills effective leadership that is essential to the success of future military leaders.

MLSC 203 Fundamentals of Tactical Operations, Techniques of Leadership, and Weapons Characteristics **2c-11-2cr**

Organization, techniques, resources, and capabilities involved in conducting small-unit tactical operations. Emphasizes leadership, organization, and management techniques needed to cause a group of people to accomplish specific objectives. Characteristics of military weapons systems are taught. Students serve as leaders in Leadership Labs.

MLSC 204 National Security and Fundamentals of Military Topography **2c-11-2cr**

The study of national security concepts, policies, and national decision-making process with emphasis on national resources, national will, and economic factors. Includes a study of nuclear and conventional response options. Fundamentals of military topography, including the use of military maps to determine topographic features, to conduct land navigation, and to perform terrain analysis, are covered. Also, see Leadership Laboratory.

MLSC 305 Fundamentals of Leadership and Modern Learning/Teaching Relationship **3c-11-3cr**

A study in practical application of principles of leadership/management as applied in classroom and field to include case studies in psychological, physiological, and sociological factors that affect human behavior; individual and group solution of leadership problems common to small units. Also, see Leadership Laboratory.

MLSC 306 Study of Advance Leader Planning and Execution of Modern Combat Operations **3c-11-3cr**

An analysis of leader's role in directing and coordinating efforts of individuals and small units in execution of offensive and defensive tactical missions, to include command and control systems, the military team, and communications techniques. Also, see Leadership Laboratory.

MLSC 407 Management of the Military Complex to Include Fundamentals of Military and International Law **3c-11-3cr**

The study of the various managerial elements needed to effectively control a military organization and the techniques used to accomplish these functions. Studies in military law and international law prepare the students for their legal responsibilities. Also, see Leadership Laboratory.

MLSC 408 Seminar in Military Analysis and Management **3c-11-3cr**

Contemporary analysis of use of military in world affairs to include importance of strategic mobility and neutralization of insurgent movements. Selected management problems and situations are presented as they relate to military justice, administration, and obligation and responsibilities of an officer. Also, see Leadership Laboratory.

Leadership Laboratory (one afternoon per week) **var-0cr**

A practical experience for the attainment and application of leadership principles. Concurrently scheduled in conjunction with all Military Science courses, provides for practical challenges in personal accomplishment, both physical and mental, and for development of teamwork and leadership.

Summer Camp **var-0cr**

Attend a six-week summer camp upon completion of the first year of the Advanced Course. Time at camp is devoted to practical application of principles and theories taught during the preceding school year. While at camp, each student receives lodging, subsistence, uniforms, medical care, reimbursement for travel, and pay in amount of one-half pay of second lieutenant per month.

MUHI: Music History
Department of Music
College of Fine Arts

MUHI 101 Introduction to Music **3c-0I-3cr**

A broad introduction to the technical, artistic, historical, social, and cultural dimensions of music, drawing on musical traditions from around the world. Students learn to recognize basic ways in which music is put together, communicates meaning to its listeners, and enriches many aspects of life. Through attendance at concerts, students gain familiarity with musical events in their community.

MUHI 102 Music and Literature Survey **3c-0I-3cr**

Prerequisite: Music major or instructor permission

An introduction to a broad spectrum of music and literature of various genres through a careful analysis of poetry, fiction, and drama, both in the original format and in a variety of musical settings. Includes music and literature of various time periods, nationalities, and minorities, including

works by women and works from nonwestern musical traditions. For music majors and other who have a substantial knowledge of music, this course fulfills both the Liberal Studies Fine Arts and Humanities Literature requirement for music majors.

MUHI 114 Analysis of Popular Music **3c-0l-3cr**

Introduces active listening and the materials of Western music via contemporary popular repertoire. Covers notation, basic pitch, and rhythm constructs, and analysis with and without score, as well as aspects of songwriting, production, and recording.

MUHI 222 Music of the British Invasion **3c-0l-3cr**

Explores the music, personalities, and cultural and historical influences of the so-called "British Invasion" of popular music to America. Covers groups and individual performers from the UK who made an impact on the American popular music scene from 1964 to 1979. Addresses the pre-invasion scene and the long-term effects of the British Invasion.

MUHI 223 Musical Cultures from Around the World **3c-0l-3cr**

Explores a variety of world cultures through their music. Focuses on music as a product and reflection of culture as well as an aesthetic art form. Introduces the basic elements of music, identifies the musical styles of different cultures, and analyzes how music communicates and reflects cultural values which enrich the lives of people in these communities. Provides concert attendance opportunities to gain familiarity with musical events in communities and reflect on the role of the individual in these musical culture.

MUHI 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

MUHI 301 Music History I **3c-0l-3cr**

Prerequisites: MUHI 102, ENGL 101, 202, HIST 196 or 197 or 198

Survey of the musicians, cultural settings, aesthetics, musical styles, and repertoires of Western Europe from Antiquity to the late 18th century. Introduces research methods in music history.

MUHI 302 Music History II **3c-0l-3cr**

Prerequisites: MUHI 102, ENGL 101, 202, HIST 196 or 197 or 198

Survey of the musicians, cultural settings, aesthetics, musical styles, and repertoires of Europe and the United States from the late 18th century to the present. Also focuses on developing research writing skill in music history.

MUHI 333 History of Popular Music Since 1945 **3c-0l-3cr**

Survey of the musical figures, styles, and cultures of popular music in the US and the UK since 1945.

MUHI 420 The 20th Century **3c-0l-3cr**

Prerequisites: MUHI 301, 302

A survey of the stylistic trends of music from 1900 to the present, beginning with Debussy, Ravel, and other impressionists through the music of Schonberg, Stravinsky, Webern, Honegger, and Milhaud. Offered infrequently.

MUHI 421 Topics in American Music **3c-0l-3cr**

Prerequisites: MUHI 301, 302

Emphasizes reading, discussion, and writing on specialized topics in the history of American music. The topic varies from semester to semester and are announced before registration. Addresses such topics as Art Music in American Culture, Music and the Moving Image, Popular Music, Music and Drama, or Virtuoso Performers in America.

MUHI 425 19th-Century Music **3c-0l-3cr**

Prerequisites: MUHI 301, 302

Examines the musical and historical aspects of some representative works in four significant repertoires of 19th-century music: songs, characteristic works for piano, opera, and symphonies. Further examines how the works intersect with a number of social, cultural, aesthetic, political, and economic themes that pervade the century, such as the rise of the middle class, city cultures, the domestic music market, the invention of "the folk," national-

ism and exoticism, social and political revolutions, idealism and its successors, and the virtuoso.

MUSC: Music **Department of Music** **College of Fine Arts**

MUSC 110 Fundamentals of Theory **3c-0l-3cr**

Rudiments of materials; harmonic, melodic, rhythmic, and basic formal procedures of the common practice period including pitch reading, interval construction, scales, and modes.

MUSC 111 Theory Skills I **0c-3l-2cr**

Prerequisite: Music major or instructor permission

Develops aural skills through dictation and interpretation of written music by sight-singing. Taken in conjunction with Theory I.

MUSC 112 Theory Skills II **0c-3l-2cr**

Prerequisite: MUSC 111 with a grade of "C" or better or Satisfactory

Continues development of aural skills through dictation, sight-singing, keyboard skills, and improvisation. Taken in conjunction with Theory II.

MUSC 113 Theory I Practicum **0c-0l-1cr**

Prerequisite: Music major or instructor permission

Corequisite: MUSC 115

Reinforces the core concepts of MUSC 115 via recitation, written course work, guided listening, and musicianship drills. Any student who enrolls Theory I may also register for the practicum. Students who fail the departmental theory placement exam must complete the course.

MUSC 115 Theory I **3c-0l-3cr**

Prerequisite: Music major or instructor permission; concurrent

enrollment in MUSC 113 or score of at least 70 percent on the departmental theory placement exam

The study of the harmonic, melodic, and formal devices of the common practice period, from simple diatonic chords through seventh chords.

MUSC 116 Theory II **3c-0l-3cr**

Prerequisite: MUSC 115, with a grade of "C" or better or Satisfactory

The study of the harmonic, melodic, and formal devices of the common practice period, from simple diatonic chords through secondary dominants. Introduces basic music forms.

MUSC 120 Brass Ensemble **0c-2l-0/1cr**

Prerequisite: Music major or instructor permission

A chamber ensemble experience for brass performers.

MUSC 121 Chamber Singers **0c-3l-0/1cr**

Prerequisite: Music major or instructor permission

Performs a broad spectrum from early Gregorian chant to contemporary rock cantatas.

MUSC 122 University Chorale **0c-3l-0/1cr**

Prerequisite: Music major or instructor permission

Studies and performs masterworks from the choral literature.

MUSC 123 Symphony Band **0c-3l-0/1cr**

Prerequisite: Music major or instructor permission

A large ensemble experience for woodwind, brass, and percussion performers.

MUSC 124 Concert Band **0c-3l-0/1cr**

A large ensemble experience for woodwind, brass, and percussion performers.

MUSC 125 Marching Band **0c-6l-0/1cr**

MUSC 126 Music Theater **0c-6l-0/1cr**

Prerequisite: Music major or instructor permission

The study and performance of a wide variety of musical theater venues from opera to Broadway.

MUSC 127 Percussion Ensemble 0c-4l-0/1cr**Prerequisite:** Music major or instructor permission

The student performs pieces ranging from traditional to contemporary, novelty to transcriptions, and marimba ensembles to world music.

MUSC 128 Opera/Musical in Production Ensemble 0c-3l-0/1cr**Prerequisites:** Successful audition and instructor permission

An opportunity with academic credit to make significant contributions to campus opera and musical theater productions, augmenting music course work in the areas of musical training and performance experience for the singer-actor and the pit orchestra musician. Course work consists of rehearsal and performance of a full-length mainstage opera or musical, culminating in four to eight public performances. Singers in the production ensemble learn performance techniques, characterization skill, and physical coordination and freedom of movement on stage. Instrumentalists in the pit orchestra learn performance and ensemble techniques, including challenging reading skills and the ability to interpret a wide variety of musical styles. This is a repeatable course that meets Music Department ensemble requirements.

MUSC 129 University Symphony Orchestra 0c-5l-0/1cr**Prerequisite:** Music major or instructor permission

Provides experience performing standard orchestral repertoire as well as new and unusual works for orchestra.

MUSC 130 String Ensemble 0c-2l-0/1cr**Prerequisite:** Music major or instructor permission

Provides string players an experience with music from Baroque works of Vivaldi, Handel, and Bach to the new and experimental.

MUSC 131 University Wind Ensemble 0c-3l-0/1cr**Prerequisite:** Music major or instructor permission

A large ensemble experience for woodwind, brass, and percussion performers.

MUSC 132 Men's or Women's Chorus var-0-1cr

A choral ensemble experience for men's and women's voices respectively.

MUSC 133 Woodwind Ensemble 0c-2l-0/1cr**Prerequisite:** Music major or instructor permission

A chamber ensemble experience for woodwind performers.

MUSC 134 University Chorus 0c-3l-0/1cr

A large, mixed chorus that performs major works each semester.

MUSC 135 Jazz Ensemble 0c-3l-0/1cr**Prerequisite:** Music major or instructor permission

The study and performance of all styles of jazz, including swing, Latin, rock fusion, and other contemporary idioms.

MUSC 136 Advanced Jazz Ensemble 0c-3l-0/1cr**Prerequisite:** Music major or instructor permission

The student performs a mixture of jazz styles from Latin to swing, ballads to fusion.

MUSC 137 Piano Accompanying 0c-1l-0/1cr

Piano accompanying may be scheduled by qualified (successful audition) pianists from the Music Department in partial fulfillment of ensemble requirements. May be repeated for credit. Pianists registered for this course will provide accompaniments for Music Department students in solo vocal or instrumental performances in area and departmental recitals and/or in voice and instrumental lessons. Registration must be approved by a designated Music Department faculty member from the piano area.

MUSC 138 Vocal Repertoire Ensemble 0c-2l-0/1cr**Prerequisites:** Music major with a successful audition and instructor permission

Explores the performance practices of various styles and genres of classical vocal music, augmenting course work in the areas of applied voice training and performance experience for vocal musicians in a master class format. Features a different vocal style/genre/theme each semester. Course work for the ensemble consists of performance and coaching of assigned music concentrating on historically informed performance practice, as well as

composer study and style profiles. Possible topics include Sacred Vocal Music, English Renaissance and Baroque Vocal Music, Vocal Music of Franz Schubert, Vocal Music of the American 20th Century, Vocal Music for the High School Students, etc. This is a repeatable course that meets the Music Department's ensemble requirements.

MUSC 139 Piano Ensemble 1c-1l-0/1cr**Prerequisites:** Music major, instructor permission

The study and performance of repertoire for piano in ensemble with other pianists, vocalists, and instrumentalists. Special considerations for accompanying and collaborating in chamber music are discussed and practiced.

MUSC 140 Popular Music Ensemble 0c-3l-1cr

Prerequisite: MUSC 114 and/or instructor permission by audition on voice or an instrument or by presenting evidence of electronic music creation Laboratory for performance and creative expression in any popular music style, past, present, or future. Instruction in small groups selected by instructor and students including pre-existing bands, as well as group instruction and critiques. Areas of focus include creativity within popular music styles, group rehearsal dynamics and techniques, and preparing for live performances. May be repeated for credit.

MUSC 151 Class Voice I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

For non-voice and music education majors. Development of correct vocal production techniques through individual and group performance in class. Use of the voice as a tool for theory skills and for eventual use in the music classroom.

MUSC 152 Class Voice II 1c-1l-1cr

A continuation of Class Voice I. Resumes development of correct vocal production techniques through performance.

MUSC 153 Class Piano I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

For music majors with no significant background in piano who need to develop functional keyboard skills. Emphasizes scales, chord progressions, and sight-reading. Harmonizing melodies and playing simple accompaniments are included in this skill-oriented course.

MUSC 154 Class Piano II 1c-1l-1cr

A continuation of Class Piano I; for music majors.

MUSC 155 Class Strings I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

For music education majors who will develop rudimentary playing techniques sufficient to initiate instruction for beginning students. Emphasizes correct playing positions and tone production for violin, viola, cello, and double bass.

MUSC 157 Class Percussion I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

A practical introduction to the various instruments of the percussion family. Students demonstrate correct playing techniques and develop a resource file containing information on percussion instruments and instructional materials as needed by the school music teacher.

MUSC 159 Class Brass I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

For music education majors who will demonstrate rudimentary playing techniques and tone production skills to initiate beginning instruction. Students develop playing on trumpet or French horn and trombone, euphonium or tuba.

MUSC 161 Class Woodwinds I 1c-1l-1cr**Prerequisite:** Music major or instructor permission

For music education majors who will acquire correct tone production and playing techniques sufficient to initiate beginning instruction. Students demonstrate skills with flute, clarinet, saxophone, and oboe or bassoon.

MUSC 180 Technology for General Musicianship 2c-1l-2cr

Prerequisite: Music major enrolled in BA or BFA program or instructor permission

An introduction to the fundamental concepts of music technology, including the basics of digital audio sound recording, music notation, MIDI, mixing and sound synthesis, and the construction and use of web pages in a music career.

MUSC 211 Theory Skills III 0c-3l-2cr

Prerequisite: MUSC 112, with a grade of "C" or better or Satisfactory
Further development of aural skills through dictation, sight singing, keyboard skills, and improvisation. Taken in conjunction with Theory III.

MUSC 212 Theory Skills IV 0c-3l-2cr

Prerequisites: MUSC 211 and 154 or APMU 151, with a grade of "C" or better or Satisfactory
Culmination of the development of aural and keyboard skills including sight-reading, performance, and improvisation. Taken in conjunction with Theory IV.

MUSC 215 Theory III 3c-0l-3cr

Prerequisites: MUSC 115, 116, with a grade of "C" or better or Satisfactory

An extension of the techniques of the 18th and 19th centuries to include modulation, altered chords, more advanced musical forms, and contrapuntal procedures.

MUSC 216 Theory IV 3c-0l-3cr

Prerequisites: MUSC 115, 116, 215, with a grade of "C" or better or Satisfactory

An extension of the techniques of the 18th and 19th centuries to include modulation, altered chords, more advanced musical forms, and contrapuntal procedures. Theory IV concentrates largely on music and materials of the present century.

MUSC 217 Keyboard Harmony 3c-0l-3cr

Prerequisites: MUSC 212, 216, and the equivalent of a B Jury, or instructor permission

A keyboard approach to understanding harmony observed during the common practice period. Study through the weekly performance and realization of various exercises includes figured bass, score reading (works for small and large orchestra), playing by ear, and applied theoretical analysis. Projects include creating a reduced, four-part score from one movement of a large orchestral work and a transcription of one movement from a large orchestral work.

MUSC 219 Music Education Practicum Ensemble var-0-1cr

Prerequisite: At least one of the following must be completed before enrollment: MUSC 151, 155, 157, 159, or 161, or instructor permission

An opportunity for preservice music teachers or other interested persons to continue to gain experience in a music ensemble setting either in the role of performer or conductor. For music majors or approved non-majors, this is an opportunity for students to gain additional experience as a performer in a low-stress environment. For music education majors who have reached Step 1, this course offers the opportunity for students to gain hands-on experience as an ensemble conductor. Both performers and conductors gain an awareness of age-appropriate student music literature used in public school music programs.

MUSC 240 Technology in the Music Classroom 2c-1l-2cr

Introduces the technology resources available for use in the music classroom and the instructional technologies appropriate for application in K-12 settings including applications for students with disabilities. Students are exposed to a variety of media and have the opportunity to gain familiarity in their use. Emphasizes the use of the computer in the music classroom, web-based technologies, and music software.

MUSC 281 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under

any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

MUSC 311 Fundamentals of Conducting 3c-0l-2cr

Prerequisite: Music major or instructor permission

Emphasizes fundamental physical skills of conducting process; various beat patterns are mastered and elementary score reading and interpretation are considered.

MUSC 312 Choral Conducting 3c-0l-2cr

Prerequisite: MUSC 311

An opportunity to apply basic conducting techniques to choral music. Each student conducts the class in standard choral works. Includes survey of suitable literature, organizational problems, voice testing, rehearsal techniques, program building, interpretation, and diction.

MUSC 313 Instrumental Conducting 3c-0l-2cr

Prerequisite: MUSC 311

An opportunity to apply basic conducting skills to various instrumental ensembles. Includes a survey of suitable literature, organizational problems, audition procedures, rehearsal techniques, program building, and interpretation.

MUSC 315 Theory V 3c-0l-3cr

Prerequisite: MUSC 216

Many harmonic idioms of past half-century are considered, such as comparative analysis of dissonance; polytonality, polyrhythms; atonalism and 12-tone system; and microtonalism. Original writing in these styles required.

MUSC 331 Elementary Methods 2c-1l-2cr

Prerequisite: Admission to Step 1 of the 3-Step Process

Familiarizes students with contemporary music education methods for the elementary general music classroom. Includes teaching and learning strategies for developing singing, moving, listening, creating, and playing classroom percussion, recorders, and guitar. Specific focus on child development, characteristics of special learners, curriculum planning, and diverse musical materials. Includes three classroom observations in the field.

MUSC 333 Instrumental Methods 2c-1l-2cr

Prerequisite: Admission to Step 1 of the 3-Step Process

Familiarizes students with the instrumental music teaching process including traditional and innovative methodology; development of beliefs and values; communication, motivation, and reinforcement; curriculum development, planning, modeling, sequencing, and assessment; recruiting and retention; teaching techniques for rehearsals for the art of lesson giving and for confronting the main issues of rhythm and intonation; development of aural/visual discrimination skills; improvisation; aptitude tests and testing; classroom control; literature; and equipment.

MUSC 335 Music for Students with Disabilities in Inclusive Settings 1c-1l-1cr

Prerequisite: Admission to Step 1 of the 3-Step Process

Corequisite: EDUC 242

Develops music education skills, techniques, and materials for students with disabilities and special needs within the music classroom setting. Legal rights of students with special needs are stressed with regard to opportunities to participate in music activities and ensembles. Must be elected concurrently with EDUC 242. Includes field experiences in the music classroom during the EDUC 242 observation period.

MUSC 337 General/Choral Methods 2c-1l-2cr

Prerequisites: MUSC 212, admission to Step 1 of the 3-Step Process

A pedagogical overview of music methods related to general and choral music curricula for the middle school, junior high school, and high school. Emphasizes the complex factors of adolescent behavior and physiology, administrative issues, performance expectations, and conceptually based learning that influence music teaching at this level.

MUSC 351 Italian Diction and Literature 1c-1l-1cr

A laboratory course in Italian diction for first-semester voice majors. Meets for two hours per week. Emphasizes pronunciation for the stage and the International Phonetic Alphabet. Students demonstrate skills by singing

Italian solo song literature and operatic repertoire of the 17th and 18th centuries.

MUSC 353 French Diction and Literature 1c-1l-1cr

A laboratory course in French diction for third- or fourth-semester voice majors. Meets for two hours per week. Emphasizes pronunciation for the stage and the International Phonetic Alphabet. Students demonstrate skills by singing French solo song literature and operatic repertoire.

MUSC 354 German Diction and Literature 1c-1l-1cr

A laboratory course in German diction for second-semester voice majors. Meets for two hours per week. Emphasizes pronunciation for the stage and the International Phonetic Alphabet. Students demonstrate skills by singing German solo and song literature and operatic repertoire.

MUSC 403 Practicum in String Pedagogy 1c-0l-0l/1cr

Prerequisites: FBI, Act 34, and Act 151 clearances, instructor permission
Practical applications of string methods and string pedagogy techniques for instruction in hands-on teaching experiences in individual and ensemble settings. The emphasis is on sequential instruction and reflective assessment of teaching techniques and goals.

MUSC 404 String Pedagogy 2c-0l-2cr

Prerequisite: Instructor permission

The study of specific techniques of and pedagogical approaches for violin, viola, cello, and double bass in both individual and class situations.

MUSC 405 Piano Pedagogy 3c-0l-3cr

Prerequisites: Junior standing in piano and a piano major or minor
A survey of current and significant past developments in teaching of piano, both privately and in small and large classes. The various piano methods are analyzed, compared, criticized, and adapted to each individual's use.

MUSC 406 Vocal Pedagogy 3c-0l-3cr

Prerequisite: APMU 255 or instructor permission

Introduces vocal anatomy, the acoustics of singing, and various methods of vocal instruction. Applies pedagogical principles through mock teaching and teaching observation, and students keep a teaching journal.

MUSC 408 Marching Band Techniques 2c-0l-2cr

Considers building a band show; alignment of ranks and files; development of a standard pace of 5 to 5 and 8 to 5; selection of music; instrumentation; techniques of developing morale; and fundamentals of uniform design.

MUSC 415 Counterpoint I 3c-0l-3cr

Prerequisite: MUSC 216

A study of the contrapuntal style of J. S. Bach and his contemporaries in the late Baroque era, which includes learning the essence of the "species" counterpoint of J. J. Fux and applying it to written exercises based on a given cantus firmus, as well as original compositions in the style of Bach. In addition to close study of Bach's *Two-Part Inventions* and of the fugues from the *Well-Tempered Clavier*, students hear and discuss their exercises and compositions in class so that they may learn from one another.

MUSC 417 Orchestration 3c-0l-3cr

Prerequisite: MUSC 216

All instruments of orchestra are studied from the viewpoint of their contribution to the total sound of ensemble. Ranges and timbres are considered, as well as actual arranging of selected music.

MUSC 418 Form and Analysis I 3c-0l-3cr

Prerequisite: MUSC 216

Thoroughly explores the various forms of Western music through in-depth analyses of representative examples by master composers from Baroque through 20th century. Many genres are introduced, with a special emphasis on string quartet literature.

MUSC 420 Professional Practices 2c-0l-2cr

Prerequisite: Junior standing

An overview of skills needed to be a successful, versatile, and employable musician in the 21st century, includes curriculum vitae preparation, self-promotion and marketing, finding and creating opportunities, communication skills, grant-writing and resource acquisition, and developing a

professional network. Primarily for music majors and taught in a seminar format with guest lectures.

MUSC 475 Music Lab var-0cr

All music majors must attend eight on-campus (unless preapproved) recitals and meetings per semester and all departmental recitals, as well as all recitals for their respective performance areas.

MUSC 481 Special Topics 3c-0l-3cr

Prerequisite: As appropriate to course content

May provide an in-depth study of a narrowly defined area of the discipline. Subject matter changes with repeated offering of the course. May be repeated for credit.

MUSC 482 Independent Study var-1-6cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

MUSC 493 Internship in Music var-1-6cr

For music majors who wish to receive practical experience working with people in music or in areas related to music.

**NMDT: Nuclear Medicine Technology
Department of Nursing and Allied Health Professions
College of Health and Human Services**

NMDT 427 Nuclear Scintigraphy 3c-0l-3cr

Theoretical aspects of nuclear medicine imaging procedures, including applicable pathophysiology, technical aspects for data acquisition, and computer analysis of data. Systemic radionuclide therapy procedures are also discussed.

NMDT 428 Radiation Physics 3c-0l-3cr

Applicable aspects of nuclear and atomic physics are covered both in theory and mathematical formulae. Theoretical topics include atomic and nuclear structure, radioactive decay, interactions with matter, and radionuclide production methods. Mathematical concepts discussed are the decay equation, equilibrium, and radiation dosimetry.

NMDT 429 Nuclear Medicine Instrumentation 2c-1l-3cr

Covers the basic principles of both in vitro and in vivo instrumentation. Also covers the design, operation, and quality control of gas detectors and scintillation detectors. Survey equipment, spectrometers, and stationary imaging devices are presented with their application to nuclear medicine. Includes hands-on laboratory experience with single channel analyzers and Anger cameras.

NMDT 430 Radiation Biology and Radiation Protection 2c-0l-2cr

Topics include ionization and energy transfer; molecules, cellular, tissue, and organ response to radiation; acute and chronic effects of radiation; radiation protection; licensing requirements; recordkeeping; and management of clinical radiation spills.

NMDT 431 In Vivo/In Vitro Nonimaging 1c-0l-1cr

In vivo clinical nuclear medicine procedures not resulting in images as well as principles of in vitro radioassay are presented. Included are venipuncture, blood volumes, red cell studies, Schillings test, principles of immunology, various types of radioassay, and sensitivity and specificity of procedure.

NMDT 432 Radiopharmaceuticals 3c-0l-3cr

Topics include tracer theory, pharmacological actions, localization methods, radiopharmaceutical properties, radionuclide generators, radiopharmaceutical preparations and quality control, and transient vs. secular equilibrium. Routinely used radiopharmaceuticals are discussed.

NMDT 433 Introduction to Tomographic Imaging 1c-0l-1cr

An introduction to the basic principles of cross-sectional anatomy and tomographic imaging is presented. Topics include body planes and cross-sectional anatomy of the heart, brain, liver, and lumbar spine, as applicable

to nuclear medicine, and the theory and application of both SPECT and PET imaging systems.

NMDT 434 Clinical Nuclear Medicine 0c-40I-16cr

Prerequisites: Completion of 77cr at IUP and Phase I at NMI

Student completes 1,320 hours of supervised clinical training at an affiliate hospital. Gives instruction and participates in the performance of various clinical nuclear medicine procedures, patient care, administrative duties, radiopharmaceutical preparation and quality control, equipment quality control, quality assurance, and radiation safety. Develops both technical skills and interpersonal communication skills for incorporation into the medical community and to provide high-quality patient care. Offered on a pass/fail basis only.

NMTT: Nanomanufacturing Technology Department of Physics College of Natural Sciences and Mathematics

NMTT 311 Materials, Safety, and Equipment Overview for Nanofabrication 3c-2I-3cr

Corequisite: NMTT 312

Focuses on cleanroom protocol and provides an overview of the materials, safety, and equipment issues encountered in the practice of “top down” and “bottom up” nanofabrication.

NMTT 312 Basic Nanofabrication Processes 3c-2I-3cr

Corequisite: NMTT 311

A hands-on introduction to the processing sequences involved in “top down,” “bottom up,” and hybrid nanofabrication. Focuses on a step-by-step description of the processes integration needed to fabricate devices and structures.

NMTT 313 Thin Films in Nanofabrication 3c-2I-3cr

Corequisites: NMTT 311 and 312

Provides a detailed understanding of the use and processing of thin film materials in nanofabrication. Emphasizes the understanding and operation of the state-of-the-art deposition and etching processing equipment in the Penn State Nanofabrication Facility cleanrooms.

NMTT 314 Lithography and Patterning Techniques 3c-2I-3cr

Corequisite: NMTT 311

Provides knowledge and hands-on treatment to all aspects of advanced lithography and pattern generation processes, covering topics from substrate preparation to exposure using pattern transfer equipment such as stamping and embossing, ion and e-beam, and optical contact and stepper.

NMTT 315 Materials Modifications in Nanofabrication 3c-2I-3cr

Corequisite: NMTT 311

Provides detailed knowledge of the processing steps used in modifying material properties in nanofabrication, including molecular functionalization, cross-linking, metal silicidation, material oxidation, material nitridation, barrier materials, alloying, stress control, annealing, and doping.

NMTT 316 Characterization, Packaging, and Testing of Nanofabrication Structures 3c-2I-3cr

Corequisite: NMTT 311

Addresses the issues and examines a variety of techniques and measurements essential for testing and controlling the final device fabrication, performance, and packaging.

NURS: Nursing Department of Nursing and Allied Health Professions College of Health and Human Services

NURS 101 Disaster Awareness 1c-0I-1cr

A basic understanding of the essentials of disaster planning, responding to mass casualty incidents, and postdisaster restoration of basic public health. Introduces a basic overview of health issues caused by biological, chemical, explosive, and natural disasters.

NURS 102 Disaster Preparedness and Related Health Issues 3c-0I-3cr

Learn to prepare against common types of terroristic threats, technical hazards, and natural disasters. Focuses on developing and maintaining emergency plans before, during, and after a disaster. Addresses health issues and preparation of families and communities for disasters.

NURS 143 Healthy People—Promoting Wellness 3c-0I-3cr

An introduction to the pathway of health and wellness through contributions to one’s environment and community. The interconnectedness of self, others, nature, and society on one’s health and wellness is emphasized. Students are guided through decision-making processes regarding life choices to maximize personal well-being. A personal wellness plan that incorporates aspects of physical and social health is developed using the Healthy People framework. Completion of NURS 143 fulfills the Liberal Studies Dimensions of Wellness requirement. Other 143 courses will also fulfill this requirement, and any of these courses may be substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

NURS 202 Foundations of Child Health 3c-0I-3cr

Focuses on conditions that affect the health of children. An overview of the structure and function of selected body systems. Emphasizes the development of each system during infancy and childhood. The impact of common acute and chronic diseases on children is incorporated. Health promotion concepts are addressed.

NURS 211 Fundamentals I Clinical 0c-3I-1cr

Prerequisites: Nursing majors only, BIOL 150 grade of “C” or better; CHEM 101, 102; sophomore standing; or permission

Corequisite: NURS 212 or permission

Presents concepts and basic nursing skills fundamental to the safe practice of professional nursing. A foundation for students to build their professional knowledge base as well as develop interpersonal and psychomotor skills in a variety of settings with a focus on patient-centered care for adults and older adults.

NURS 212 Fundamentals I Theory 3c-0I-3cr

Prerequisites: Nursing majors only, BIOL 150 grade of “C” or better; CHEM 101, 102; sophomore standing; or permission

Corequisite: NURS 211 or permission

An introduction to the nursing discipline, nursing process, professional standards, and values that are foundational to practice. An overview of the various levels of health care services and the professional nursing role. Concepts for effective nurse-client relationships are examined including therapeutic communication, evidence-based nursing interventions, quality patient-centered care, and safe nursing practice.

NURS 213 Fundamentals II Clinical 0c-3I-1cr

Prerequisites: NURS 211, 212 with grades of “C” or better

Prerequisite or Corequisite: BIOL 240

Corequisites: NURS 214, 236; or permission

Builds on the Fundamentals I Clinical course. Opportunities for students to continue to develop professional knowledge and skills with diverse individuals and families in a variety of settings with a focus on adults and older adults. Emphasizes developing the ability to perform comprehensive health assessments, use therapeutic communication, and provide basic nursing skills while promoting safe and quality health care.

NURS 214 Health Assessment 3c-0I-3cr

Prerequisites: NURS 211, 212 with grades of “C” or better

Prerequisite or Corequisite: BIOL 240 with a grade of “C” or better

Corequisites: NURS 213, 236; or permission

An introduction to basic health assessment for the purpose of determining a client’s health status. Students learn to conduct a comprehensive health history and physical assessment on adults and older adults. Incorporates concepts of human anatomy and physiology in the assessment of clients. Identifies appropriate nursing interventions to promote health.

NURS 236 Fundamentals II Theory 3c-0l-3cr Prerequisites: NURS 211, 212 with grades of “C” or better Prerequisite or Corequisite: BIOL 240 with a grade of “C” or better Corequisites: NURS 213, 214; or permission An introduction to fundamental nursing concepts that apply to the practice of professional nursing. Topics include elements of holistic care, promotion of psychosocial and physiologic health, and introduction to medication administration in nursing practice. Provides physiological rationale for nursing interventions with a focus on knowledge and skills to ensure safe delivery of nursing care.	NURS 332 Maternal-Neonatal Health 2c-0l-2cr Prerequisites: FDNT 212, PSYC 310; grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 333, 312 or 316; or permission Focuses on knowledge essential to providing nursing care for pregnant women, neonates, and postpartum patients within a family context. Emphasizes implementation of the nursing process and appropriate interventions for safe care. Applies evidence-based practice for the care of pregnant women, neonates, and postpartum patients.
NURS 306 Problem Solving in Nursing 3c-0l-3cr Opportunities to recognize and develop intervention strategies for problem solving in clinical nursing situations. Emphasizes developing application and analysis skills required for success in the Nursing program.	NURS 333 Maternal-Neonatal Clinical 0c-6l-2cr Prerequisites: FDNT 212, PSYC 310; grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 332, 312 or 316; or permission Opportunities to apply the nursing process with pregnant women, neonates, postpartum patients, and their families in a variety of settings and demonstrate nursing professionalism in their interactions with individuals, families, and community. Increases students’ ability to perform comprehensive health assessments and collaborate with members of the health care team to identify problems, plan, intervene, and evaluate care for pregnant women, neonates, postpartum patients, and their families. Emphasizes safe, patient-centered comprehensive, evidence-based nursing care, and professional standards of practice.
NURS 311 Introduction to Nursing Informatics 2c-0l-2cr Prerequisites: NURS 211, 212, 213, 214, 236 An introduction to basic nursing informatics for the purpose of role development of the emerging contemporary nurse. Incorporates concepts of metastructures and tools used in the workflow process. Examines legislative, cultural, and safety aspects. Discusses current and future applications emerging from the science of informatics.	NURS 334 Transitions in Professional Nursing 3c-0l-3cr Prerequisites or Corequisites: ENGL 202, licensed practical nurse Explores the dynamic nature of health and its impact on the practice of nursing. Nursing theories, concepts, and issues related to nursing practice are analyzed. Linkages among theory, research, and practice are explored for relevance and utility.
NURS 312 Professional Nursing 2c-0l-2cr Prerequisite: ENGL 202 Corequisites: NURS 330 and 331; or 332 and 333; or 336 and 337 Examines values, cultural issues, code of ethics, global and national health care policy, regulatory environments, professional standards and legal frameworks that impact health care decisions, determine professional conduct, and guide interactions with clients, families, and health care team members. Utilizes ethical decision-making frameworks to guide professional nursing practice. Focuses on developing the necessary skills to engage in scholarly writings and presentation.	NURS 336 Adult Health I 4c-0l-4cr Prerequisites: FDNT 212, PSYC 310; grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 337, 312 or 316; or permission Introduces disease processes and prevention, collaborative care, and implementation of the nursing process for adults and older adults. Enhances student knowledge regarding assessing human response to changing health and applying the appropriate nursing intervention for safe, patient-centered care. Applies evidence-based practice for the care of adults and older adults.
NURS 314 Health Policy and Law 3c-0l-3cr Focuses on understanding the evolution of healthcare policy, health law, and federal and state regulation of healthcare financing programs. Introduces healthcare policy making; critical health policy issues; legislative, regulatory, and legal challenges; and legislative and political processes that impact the healthcare delivery system in the United States. (Cross-listed as ELR 314.)	NURS 337 Adult Health I Clinical 0c-15l-5cr Prerequisites: FDNT 212, PSYC 310; grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 336, 312 or 316; or permission Opportunities to apply the nursing process to adults and older adults in a variety of settings and demonstrate nursing professionalism in their interactions with individuals, families, and community. Increases students’ ability to perform comprehensive health assessments and collaborate with members of the health care team to identify problems, plan, intervene, and evaluate care for adults and older adults. Emphasizes safe, patient-centered comprehensive, evidence-based nursing care, and professional standards of practice.
NURS 316 Evidence-Based Practice in Nursing 3c-0l-3cr Prerequisites: ENGL 202, MATH 217 Corequisites: NURS 330 and 331; or 332 and 333; or 336 and 337 Focuses on understanding and critiquing nursing research. Emphasizes understanding the research process and utilization of current evidence in nursing practice. Focuses on developing the necessary skills to engage in scholarly writing and presentation.	NURS 410 Health Promotion and Social Issues 3c-0l-3cr Prerequisites: ANTH 211, PHIL 122, SOC 151 An introduction to current social issues, models, and evidence-based research in health promotion, disease prevention, and population health relevant to individuals and communities. Explores individual and population health promotion assessment, health behavior interventions, and disease prevention in diverse populations to improve patient and population health outcomes. Develops and implements an intervention and prevention plan which addresses individual and population health problems. Critiques research and evidence-based practice relevant to population health.
NURS 330 Care of the Child and Family 2c-0l-2cr Prerequisites: FDNT 212, PSYC 310, grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 331, 312 or 316; or permission Focuses on knowledge essential to providing nursing care to the child and family. Emphasizes prevention, recognition, implementation of the nursing process, and appropriate interventions for safe care of the child. Applies evidence-based practice for the care of children and families.	NURS 412 Nursing Management 2c-0l-2cr Prerequisites: NURS 312, 316; grades of “C” or better in NURS 330, 331, 332, 333, 336, 337; or permission Corequisites: NURS 436, 437, 440 Emphasizes leadership, communication and relationship building, knowledge of the health care environment, and resource management. Discusses
NURS 331 Care of the Child and Family Clinical 0c-6l-2cr Prerequisites: FDNT 212, PSYC 310, grades of “C” or better in BIOL 240, 241, NURS 213, 214, 236; or permission Corequisites: NURS 330, 312 or 316; or permission Opportunities to apply the nursing process with children and their families in a variety of settings and demonstrate nursing professionalism in their interactions with individuals, families, and community. Increases students’ ability to perform comprehensive health assessments and collaborate with members of the health care team to identify problems, plan, intervene, and evaluate care for children and families. Emphasizes safe, comprehensive, evidence-based nursing care, and professional standards of practice.	

leadership/management skills and processes. Examines the role of designer/manager/coordinator of care in professional nursing in depth.

NURS 414 Health Policy and Patient Advocacy 3c-0l-3cr
Prerequisite: Junior standing

Focuses on the legislative, regulatory, political, and advocacy issues including safeguarding autonomy, and promoting the social justice process that impacts the healthcare delivery services in the US. Examines the impact of policy and politics on healthcare, social equity, accessibility, cost, and affordability. Examines their role in health policy development at the federal, state, and local level. Analyzes selected policies for their effect on social issues, healthcare finance and delivery. Explores the influence of global health.

NURS 431 Public/Community Nursing Clinical 0c-6l-2cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 331, 333, 336, 337; or permission
Prerequisites or Corequisites: NURS 330, 332
Corequisite: NURS 434

Opportunities for clinical practice as a provider of public/community health nursing care for the individual, family, population, and global community and to function as a member of the interprofessional team when working among diverse and/or vulnerable populations. Emphasis is placed on leadership, management, and providing safe, comprehensive, evidence-based nursing care. The effect of health policy on client care is an integral part of the course.

NURS 432 Psychiatric/Mental Health 2c-0l-2cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 331, 333, 336, 337; or permission
Prerequisites or Corequisites: NURS 330, 332
Corequisite: NURS 433

Focuses on the principles, concepts, and best practices that guide nursing practice in a variety of psychiatric/mental health settings. Addresses the role of the nurse in primary, secondary, and tertiary prevention/intervention as it relates to individuals, families, and aggregates with mental health and psychiatric conditions.

NURS 433 Psychiatric/Mental Health Clinical 0c-6l-2cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 331, 333, 336, 337; or permission
Prerequisites or Corequisites: NURS 330, 332
Corequisite: NURS 432

Focuses on opportunities to provide mental health promotion, risk reduction, and disease prevention in a variety of settings and diverse populations. Increases students' ability to perform as a member of inter-professional teams in acute and community-based psychiatric care facilities and to identify personal beliefs and how they impact the therapeutic relationship. Students assimilate evidence-based practice through critical reasoning to apply nursing strategies to assist individuals, families, and groups.

NURS 434 Public/Community Nursing 2c-0l-2cr
Prerequisite: NURS 312, 316; grades of "C" or better in NURS 331, 333, 336, 337; or permission
Prerequisites or Corequisites: NURS 330, 332
Corequisite: NURS 431

Focuses on public/community health nursing care for the individual, family, population, and global community. Examines the influences of the health care delivery systems and theoretical frameworks applicable to public/community health. Considers the impact of technology, environment, society, and current issues in public/community health nursing.

NURS 436 Adult Health II 4c-0l-4cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 330, 331, 332, 333, 336, 337; or permission
Corequisites: NURS 412, 437, 440; or permission

Focuses on the adult and older adult, family, and community with critical and/or complex health problems and with a patient-centered approach to nursing care. Emphasizes the relationships among clinical manifestations of disease states, treatment, cultural influences, and associated nursing responsibilities. Focuses on utilizing students' knowledge base of diagnos-

tics, pharmacology, interventions, and rehabilitation needs through critical reasoning to plan the care of patients with critical and/or complex health problems. Emphasizes the incorporation of evidence-based practice interventions into nursing practice.

NURS 437 Adult Health II Clinical 0c-6l-2cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 330, 331, 332, 333, 336, 337; or permission
Corequisites: NURS 412, 436, 440; or permission

Opportunities for clinical practice as a provider of care for critical and/or complex, acutely ill clients in a variety of settings. Places emphasis on leadership, management, and providing safe, comprehensive, evidence-based nursing care. Utilizes patient care technologies, information systems, and communication devices that support safe, patient-centered nursing care.

NURS 440 Nursing Management Clinical 0c-6l-2cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 330, 331, 332, 333, 336, 337; or permission
Corequisites: NURS 412, 436, 437; or permission

An opportunity for students to incorporate delegation and prioritization skills when caring for multiple patients in an adult health acute care setting. Emphasizes leadership skills and management principles to ensure delivery of high-quality, evidence-based, cost-effective care.

NURS 450 A Cognitive Approach to Clinical Problem Solving 3c-0l-3cr
Prerequisites: NURS 312, 316; grades of "C" or better in NURS 330, 331, 332, 333, 336, 337; or permission
Corequisite: NURS 431 or 433 or 440 or 437; or permission

Focuses on advanced clinical problem-solving and decision-making skills needed by professional nurses. Factors that influence clinical problem solving are examined to facilitate higher-level thinking in simulated clinical situations.

NURS 455 Health Care Informatics 3c-0l-3cr
Focuses on aspects of acquiring, storing, retrieving, and effectively utilizing health information to support decision making, knowledge, and outcomes. Combines concepts, theory, and practice from the cognitive, computer, and information sciences.

NURS 482 Independent Study var-1-3cr
Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

NURS 493 Internship var-1-12cr
Prerequisites: NURS 236 or licensed practical nurse or registered nurse; 60cr completed; minimum 2.0 GPA

A supervised experience in a practice setting that extends and complements course work in nursing. The types of practice settings may include acute care hospitals, outpatient health centers, and community agencies.

PHIL: Philosophy
Department of Philosophy
College of Humanities and Social Sciences

PHIL 100 Introduction to Philosophy 3c-0l-3cr
Acquaints the beginning student with philosophical problems and methods. Possible topics include the existence of God, human freedom, the scope and limits of human knowledge, the nature of mind, the nature of morality, and the relationship between the individual and the state.

PHIL 101 Critical Thinking 3c-0l-3cr
An introduction to basic principles of informal logic and critical thinking. An emphasis is on different kinds of arguments, methods of argument evaluation, and the analysis of arguments as they arise in various contexts, such as political debate, advertising, science, law, and ethics.

PHIL 122 Contemporary Moral Issues**3c-01-3cr**

Examines attempts to answer foundational questions of ethics, including the following: Why should we be moral? What do morally correct actions have in common? Are there objective moral standards, or are moral codes relative to individual societies? Does morality require religion? Diverse moral theories are applied to contemporary debates and controversies, such as environmental ethics, abortion, capital punishment, affirmative action, and animal rights. Readings will draw on historical and contemporary figures.

PHIL 130 Introduction to Biomedical Ethics**3c-01-3cr**

Introduces ethical issues in medicine and health care, such as patient autonomy and surrogate decision making; death, dying, and end of life care; reproductive ethics; justice and allocation of health care resources; global health, poverty, and development; public health ethics; and ethics of emerging medical technologies.

PHIL 221 Symbolic Logic I**3c-01-3cr**

Introduces students to the study of formal patterns of good reasoning. Topics include symbolizing English sentences in an artificial language, distinguishing between the semantics and syntax of that language, and learning to test for logical properties and relations using semantic methods (truth-tables, models) and syntactic methods (derivations). Students with an interest in computer science and mathematics will find the material of particular interest and use.

PHIL 223 Philosophy of Art**3c-01-3cr**

Introduces students to the philosophical investigation of art and aesthetics. Focuses on some of the major problems in the philosophy of art, for example, the definition of art, the nature of works of art, the nature of artistic creativity, the evaluation of works of art, the relationship between art and emotion, and the relationship between aesthetics and ethics.

PHIL 232 Philosophies of Love**3c-01-3cr**

Examines the philosophical foundations of contemporary institutions and ideologies of romantic love. Considers major positions in both the history of philosophy and contemporary philosophy. Investigates the concepts, problems, and philosophical theories central to understanding romantic love, marriage, and divorce (Titled Philosophical Perspectives on Love, Marriage, and Divorce before 2014-15.)

PHIL 240 Philosophy and the Good Life**3c-01-3cr**

Examines philosophical attempts to say what it means to live a good life. Is living a good life simply about maximizing the pleasure one experiences? Does a good life require religious faith? Is being virtuous essential to living a good life? Historical thinkers considered may include Plato, Aristotle, Confucius, Laozi, Augustine, Aquinas, Rousseau, Nietzsche, and Russell. Contemporary philosophical work on happiness informed by empirical research may also be considered.

PHIL 270 Ethics and the Environment**3c-01-3cr**

Applies ethical theory to environmental issues, including resource depletion, animal rights, biotic endangerment, environmental degradation, climate change, and environmental justice. Considers arguments by which human-caused environmental destruction is intrinsically wrong, wrong independently of human interests and purposes, and arguments for environmental policies by which the following are granted rights, interests, or inherent value: non-human animals, all living things, all natural things, biotic communities, and ecosystems. Also considers arguments that environmental policies cannot be applied globally without injustice to humans, including poor and indigenous peoples.

PHIL 281 Special Topics**var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

PHIL 320 Ethical Theory**3c-01-3cr**

Examines historical and contemporary work on fundamental issues in ethical theory, with an emphasis on the three major approaches in normative

ethics: consequentialism, deontology, and virtue ethics. Also explores select topics in contemporary metaethics, such as the meaning of moral discourse, the possibility of moral knowledge, and the nature of reasons and moral motivation.

PHIL 323 Political Philosophy**3c-01-3cr**

Through an examination of Ancient, Modern, and contemporary political thought, introduces the key issues of political philosophy: the justification of government authority, the role of the government in the just distribution of wealth in society, the nature of equality, the nature and importance of individual liberty and rights, the connections between race, gender, and political power, and the question of the universal applicability of concepts fundamental to European and American political philosophy in light of increasing globalization.

PHIL 324 Ancient Greek Philosophy**3c-01-3cr**

Explores the foundations of Western philosophy through examination of important philosophers of the Ancient period, such as the Pre-Socratic philosophers, Socrates, Plato, and Aristotle. Topics may include the nature of the physical universe, Plato's theory of Forms, the nature of happiness, and the possibility of morality. (Titled Ancient Philosophy before 2014-15.)

PHIL 325 Early Modern European Philosophy**3c-01-3cr**

A study of exemplary philosophical texts from the late 16th through the late 18th century. Figures may include Descartes, Hobbes, Locke, Spinoza, Berkeley, Leibniz, Hume, and Kant. Explores such topics as the nature of matter and mind, the possibility and limits of knowledge, and the emerging scientific challenge to church and ancient authority. (Titled Modern Philosophy before 2014-15.)

PHIL 326 Existentialism**3c-01-3cr**

Examines existentialism as a philosophical movement, one that rejects both traditional religious and overly reductive, scientific conceptions of human existence. As an alternative, existentialist philosophers share the project of trying to articulate a conception of an authentic, meaningful life outside of the parameters of these approaches. Readings are drawn from major thinkers in this movement, including Søren Kierkegaard, Friedrich Nietzsche, Martin Heidegger, Jean-Paul Sartre, Simone de Beauvoir, and Albert Camus. (Titled Phenomenology and Existentialism before 2014-15.)

PHIL 330 Philosophy of Science**3c-01-3cr**

Philosophical investigation into the character of empirical scientific thought and practices: measures of confirmation; empirical success; theory ladenness of observation; scientific rationality and the aims of science; the inference from empirical success to truth; the logic of explanation; the character of natural laws; levels of theorizing and intertheoretic reduction; the ideal of objectivity and the place of extra-scientific values in theory appraisal. No special background required.

PHIL 350 The Human Experience of Time**3c-01-3cr**

Examines philosophical questions about the nature and experience of time. Explores how philosophical views about time are informed by work in different fields, such as anthropology, religious studies, and physics. Questions include whether time is real or an illusion, whether it flows, whether the past, present, and future are equally real, whether time travel is possible, how different cultures think about time and what light that sheds on its true nature. Readings drawn from a wide range of historical and contemporary sources.

PHIL 360 Philosophy of Mind**3c-01-3cr**

Prerequisite: Philosophy major or minor, or junior or senior standing, or instructor permission

Focuses on the mind-body problem. Topics covered may include dualism, logical behaviorism, identity theories, functionalism, various forms of physicalism, mental causation, reductionism, and consciousness.

PHIL 390 Philosophy of Human Nature**3c-01-3cr**

Examines philosophical theories of human nature, including how traditional philosophical debates about the mind, morality, persons, and freedom are informed by recent empirical work in the cognitive sciences. Topics covered may include philosophical and scientific debates about the innate content

and structure of the human mind, moral judgment, the possibility of free will, the extent to which human beings are rational, and the nature of the self and self-knowledge. Connections between conceptions of human nature and political philosophy, as well as bioethical issues concerning enhancement and transhumanism, may also be discussed.

PHIL 420 Metaphysics **3c-0l-3cr**

Explores the nature of reality through investigation of such concepts as substance, cause, freedom, and God. Draws on both historical and contemporary writings. Other topics may include the nature of space and time, the role of language in comprehending reality, the possibility of nonsensory knowledge, and the nature of possibility and necessity.

PHIL 421 Theory of Knowledge **3c-0l-3cr**

Examines various views concerning the nature of knowledge, belief, and justification. Readings drawn from a wide range of historical and contemporary authors. Additional topics may include perceptual knowledge, common sense, skepticism, and the relation between a knower and the community.

PHIL 450 Philosophy of Law **3c-0l-3cr**

An examination of central issues in the philosophy of law, including law and morality, the interpretation of law, and philosophical and legal issues concerning punishment, justice, rights, and liberty. Combines philosophical theory with consideration of selected court cases to develop an understanding of law and its place in society.

PHIL 460 Philosophy of Language **3c-0l-3cr**

An investigation of issues in the philosophy of language and related issues in linguistics (including anthropological linguistics, sociolinguistics, and psycholinguistics). Topics include, for example, the influence of language on perception, rationalist/empiricist perspectives on language acquisition, language and political control, reference, meaning, and truth.

PHIL 481 Special Topics **var-l-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

PHIL 483 Honors Thesis **var-1-6cr**

Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

PHIL 493 Internship in Philosophy **var-3-6cr**

Prerequisites: Permission of the department, junior or senior philosophy major or double major, 2.5 GPA

A supervised experience of no longer than one semester and no less than five weeks. This would take place in either a public or private organization in areas that either extend and develop or complement course work in philosophy. Log and/or major paper required. Internships are to be done with a clear analysis, argumentation, and examination of governing principles.

PHYS: Physics
Department of Physics
College of Natural Sciences and Mathematics

PHYS 100 Prelude to Physics **3c-0l-3cr**

Prerequisite: MATH 100 or equivalent high school preparation
Prepares students for their first course in quantitative physics by reviewing fundamental concepts involving measurement and error, graphing, motion, and applications of Newton's Laws in developing problem-solving skills. Also presents a historical perspective as well as introduces the many opportunities that exist for those with a background in physics.

PHYS 101 Energy and Our Environment **3c-0l-3cr**

An overview of the areas of energy, transportation, and pollution. These topics are approached via the relevant concepts of physical science and physics. A non-laboratory course for Liberal Studies requirements.

PHYS 105 The Physics of Light and Sound **3c-0l-3cr**

The study of light and sound as applied in the production of objects of art and the production of music. Includes the study of vision, light in nature, photography, and artistic media and the study of hearing, musical sound, musical instruments, and room acoustics. A non-laboratory course for Liberal Studies requirements.

PHYS 111 Physics I Lecture **3c-0l-3cr**

Prerequisites: Elementary algebra and trigonometry
General college physics; mechanics, wave motion, and sound.

PHYS 112 Physics II Lecture **3c-0l-3cr**

Prerequisite: PHYS 111
Electricity and magnetism, heat, light, atomic and nuclear physics, and an elementary introduction to relativity and quantum theory.

PHYS 121 Physics I Lab **0c-3l-1cr**

Prerequisite or Corequisite: PHYS 111
Physics laboratory at level of Physics I; exercises in mechanics, wave motion, and sound.

PHYS 122 Physics II Lab **0c-3l-1cr**

Prerequisite or Corequisite: PHYS 112
Physics laboratory at level of Physics II; exercises in optics, electricity and magnetism, and radioactivity.

PHYS 131 Physics I-C Lecture **3c-0l-3cr**

Prerequisite: MATH 121 or 125, at least concurrently
A calculus-based course in general college physics; topics covered are similar to those covered in PHYS 111 but are treated in more depth through the use of calculus.

PHYS 132 Physics II-C Lecture **3c-0l-3cr**

Prerequisite: MATH 122 or 126, at least concurrently
A calculus-based course in general college physics utilizing the techniques in problem solving learned in PHYS 131 applied to more advanced topics; topics covered are: electric fields, magnetic fields, Coulomb's Law, Gauss' Law, Ampere's Law, circuits, geometric optics, and physical optics.

PHYS 141 Physics I-C Lab **0c-3l-1cr**

Prerequisite or Corequisite: PHYS 131
Physics laboratory at same level as Physics I-C; exercises in mechanics, wave motion, and sound.

PHYS 142 Physics II-C Lab **0c-3l-1cr**

Prerequisite or Corequisite: PHYS 132 at least concurrently
Physics laboratory at same level as Physics II; exercises in optics, mechanics, wave motion, and sound.

PHYS 151 Medical Physics Lecture **3c-0l-3cr**

Development of concepts and principles of physics with a strong emphasis as to their use and application in medical and other biophysical areas.

PHYS 161 Medical Physics Lab **0c-3l-1cr**

Corequisite: PHYS 151
Experiments dealing with applications of physical principles to the field of medicine. Practical experience with use of electronic equipment, chart recorders, etc., of type found in modern-day medicine are introduced.

PHYS 231 Electronics **3c-3l-4cr**

Prerequisites: MATH 122 or 126; PHYS 112 or 132
Circuit theory, transients, transistor circuits, frequency response, input and output impedance, feedback, and electronic noise. Operational amplifiers and digital electronics.

PHYS 260 Introduction to Nanoscience and Technology**3c-0l-3cr****Prerequisite:** PHYS 112 or 132

An introduction to the theoretical and experimental concepts of the emerging field of nanotechnology. Prepares students from a wide range of disciplines for careers or higher studies in areas involving nanotechnology. Inherently interdisciplinary in nature, bridges across physics, chemistry, biology, and computer science. Covers the emerging role of nanostructure materials for current and future applications in the fields of electronics, energy, textiles, and medicine.

PHYS 281 Special Topics**var-1-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

PHYS 331 Modern Physics**3c-0l-3cr****Prerequisites:** PHYS 112 or 116 or 132; MATH 122 or 126

The history of modern physics is covered. Particle and wave properties of matter are explored using the ideas of quantum mechanics. Systems examined using the ideas of quantum and classical mechanics are atomic structure, solid state, and nuclear physics. The special theory of relativity will also be covered. Some of the problems are solved using computers.

PHYS 342 Thermal and Statistical Physics**3c-0l-3cr****Prerequisites:** MATH 122 or 126; PHYS 112 or 132

Thermometry, laws of thermodynamics, low-temperature physics, entropy, properties of ideal gas, and an introduction to statistical mechanics.

PHYS 345 Optics**3c-0l-3cr****Prerequisites:** MATH 122 or 126; PHYS 112 or 132

Geometrical optics and physical optics, including interference, diffraction, and polarization. Quantum optics is introduced.

PHYS 350 Intermediate Experimental Physics I**0c-6l-3cr****Prerequisites:** PHYS 331; PHYS 342 or EOPT 120

Performs required fundamental experiments in areas of mechanics, optics, modern physics, and heat. Speaking before other classmates and faculty and competence in writing scientific papers and reports are emphasized. Effectiveness in the collection of data is important. Computers will often be utilized to perform data taking and analysis.

PHYS 355 Computer Interfacing**2c-2l-3cr****Prerequisite:** COSC 110

Teaches the fundamentals of interfacing the personal computer to its physical surroundings. Teaches how to collect data and to control experiments in real time. Shows how to use digital-to-analog conversion (DAC) techniques and analog-to-digital conversion (ADC) techniques. A graphical software package (such as LabVIEW) is also used to design icon-based interfacing tools, to learn how to use virtual instruments, and to analyze data.

PHYS 401 Theoretical Physics**3c-0l-3cr****Prerequisites:** PHYS 131, 132; MATH 125, 126**Prerequisite or Corequisite:** MATH 341 or department permission

Explores the applied mathematics necessary to solve ordinary and partial differential equations in closed and series forms for boundary value problems in intermediate and advanced physics. Coordinate transformations, tensor analysis, special functions, and series involving complex variables and integral transforms are also considered.

PHYS 441 Classical Mechanics**3c-0l-3cr****Prerequisites:** PHYS 131, 132; MATH 125, 126**Corequisite:** MATH 341 or Physics Department permission

Covers vectors, generalized coordinates, and coordinate transformations to study the mechanics of a particle and a system of particles in one, two, and three dimensions. Central forces, planetary, and satellite motion and rotation, oscillations, and conservation laws in the Newtonian formulation of classical mechanics are included and used to solve dynamical problems for various mechanical systems.

PHYS 451 Electricity and Magnetism**3c-0l-3cr****Prerequisites:** PHYS 131, 132; MATH 125, 126**Prerequisite or Corequisite:** PHYS 441 or department permission

Treats elements of vector analysis, electrostatics, special techniques for finding electric potential, electric field in matter, magnetostatics, magnetic field in matter, electrodynamics, Maxwell's equations, and electromagnetic waves at the calculus level.

PHYS 461 Quantum Mechanics I**3c-0l-3cr****Prerequisites:** PHYS 331, MATH 341

Quantum mechanics following methods of Schrodinger and Heisenberg, application to harmonic oscillator, three-dimensional Schrodinger equation, hydrogen atom, electron in a magnetic field—normal and anomalous Zeeman effect, spin.

PHYS 472 Nuclear Physics**3c-0l-3cr****Prerequisite:** PHYS 331

A survey of nuclear physics, nuclear size, nuclear mass, reaction theory, types of radioactive decay, nuclear models, nuclear forces, and elementary particles.

PHYS 482 Independent Study in Physics**var-1-6cr****Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources. Work is supervised by a Physics Department faculty member but does not necessarily involve regular lecture or laboratory hours.

PLSC: Political Science**Department of Political Science****College of Humanities and Social Sciences****PLSC 101 World Politics****3c-0l-3cr**

An analysis of contemporary (post-1945) state system and forces shaping the world in which we live. Student is given a framework within which to analyze contemporary international politics.

PLSC 111 Power and Democracy in America**3c-0l-3cr**

Investigates the way American government works (and why sometimes it doesn't). Examines who gets what, why, and how in America and who pays for it, with an emphasis on understanding the origin, structure, and functions of US government. Looks beyond the divisions between "liberals" and "conservatives" to understand and evaluate contemporary political events and practices. Founding principles and their modern application are a core focus. (Titled American Politics before 2014-15.)

PLSC 250 Public Policy**3c-0l-3cr**

Emphasizes dynamics of government as they are evidenced in public opinion, pressure groups, political parties, and our governmental institutions; attention also directed toward the political-economical nexus within American society.

PLSC 251 State and Local Political Systems**3c-0l-3cr**

Examines institutions and processes of state and local governments, with special attention to Pennsylvania; emphasis on the nature of federalism, state constitutions, and role of state and local government in an urban society.

PLSC 260 Contemporary Political Ideas**3c-0l-3cr**

A survey of political ideas influential in contemporary politics, knowledge of which is essential for various analyses in political science. Ideas discussed include conservatism, "liberalism" or social democracy, socialism, anarchism, fascism, political Islam, and feminist and environmentalist thought.

PLSC 280 Comparative Government I: Western Political Systems**3c-0l-3cr**

Analyzes Western political systems with emphasis on major contemporary democratic governments of Europe. Analyzes and compares their political cultures, political institutions, and political processes.

PLSC 281 Special Topics var-1-3cr Prerequisite: As appropriate to course content Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.	PLSC 351 Legislative Process 3c-0l-3cr A functional study of legislative bodies and process of legislation, covering organization of legislative assemblies, operation of committee system, procedures, bill drafting, aides, and controls over legislation.
PLSC 282 International Relations 3c-0l-3cr Provides a conceptual framework for understanding sovereignty, nationalism, power, security, dispute settlement, and diplomatic, legal, economic, and military relations of nation-states.	PLSC 354 Metropolitan Problems 3c-0l-3cr Analyzes multiplicity of problems facing our metropolitan areas. Contemporary developments such as urban renewal, shrinking tax base, federal aid to cities, subsidized mass transit, municipal authorities, and political consolidation are examined.
PLSC 283 American Foreign Policy 3c-0l-3cr Examines formulation and execution of American foreign policy, with attention to governmental institutions, mass media, interest groups, and public opinion; emphasizes contemporary problems.	PLSC 355 Intergovernmental Relations 3c-0l-3cr Explores characteristics of federal systems of government, with emphasis on theories, origins, institutions, problems in intergovernmental relations in the United States, federal systems in other nations, and trends.
PLSC 285 Comparative Government II: Non-Western Political Systems 3c-0l-3cr Analyzes major non-Western political systems with emphasis on authoritarian and totalitarian systems. Analyzes and compares in a systematic manner their political cultures, political institutions, and political processes.	PLSC 358 Judicial Process 3c-0l-3cr Prerequisite: PLSC 111 Explores nature and limits of judicial power, courts as policymaking bodies, selection of judges, decision process, external forces impinging on the courts, and role of Supreme Court in its relationship with Congress, the presidency, and federalism.
PLSC 300 Research Methods in Political Science 3c-0l-3cr Prerequisite: PLSC 101 or 111 An examination of the application of the scientific approach to the investigation of social and political phenomena. Concentrates on approaches, methods, and computer tools. All political science majors and minors are strongly urged to enroll.	PLSC 359 Constitutional Law and Civil Liberties 3c-0l-3cr Prerequisite: PLSC 111 A study of civil liberties and civil rights issues through leading Supreme Court decisions; topics treated include First Amendment rights, procedural due process and the Bill of Rights, and Equal Protection problems in civil rights.
PLSC 339 Jihad and the Origins of Islamist Movements in the Middle East 3c-0l-3cr Prerequisites: Sophomore standing, 3cr of college history Discusses the concept of "jihad" in Islamic history: its origins, development, and historical deployment by groups within the Muslim community. Analyzes the history and origins of groups such as al-Qaeda, the Taliban, and ISIS and considers whether these groups are "medieval" or actually modern products of globalization. (Also offered as HIST 339; may not be taken for duplicate credit.)	PLSC 360 Classical Political Thought 3c-0l-3cr Restriction: Not for credit after PHIL 323 The origins and development of Western thought from Plato and Aristotle through Cicero and Saint Thomas Aquinas. Focuses especially on political participation as a way of life, the unity of political and moral conceptions in premodern political thought, and the relationship between order and justice.
PLSC 344 Terrorism 3c-0l-3cr Prerequisite: PLSC 101 or 111 or CRIM 101 or 102 or instructor permission An in-depth study of the legal and international issues that the United States faces in response to combating international terrorism. The emphasis is placed on identifying causes of terrorism and the most plausible threats; terrorist networks, their commonalities and differences, and the difficulty in countering; and determining appropriate responses, to include political and legal implications, threat analysis, physical security, and target hardening. (Also offered as CRIM 344; may not be taken as duplicate credit.)	PLSC 361 Modern Political Thought 3c-0l-3cr Covers the major representatives of modern political thought since the Renaissance. Follows the development of the specifically modern notion of the state and political action through the works of Machiavelli, Hobbes, Locke, Rousseau, Marx, and Lenin. Emphasizes the "instrumentalist" state and the idea of a political science.
PLSC 348 Top Secret America: The Rise and Reach of the National Security State 3c-0l-3cr Focuses on the historical development of the concept of national security in the US and on the intersection of national and broader international security concerns in the Cold War context. Identifies, for the Cold War era and beyond, diplomatic, military, and intelligence capabilities of governments and explores how individuals and groups conceptualized themselves, and their security. Explores one powerful motivator: fear and how it translated into political actions and citizen involvement in Cold War concepts. HIST 348 and PLSC 348 may be substituted interchangeably for D/F repeats, but may not be used for duplicate credit.	PLSC 362 American Political Thought 3c-0l-3cr Covers a variety of American political ideas from the Puritans through recent radical and conservative critiques of American liberal democracy. Focus on the continuing development of the idea of individual rights, the political theory of the Constitution, and the tension between classical liberalism and popular rule.
PLSC 350 The Presidency 3c-0l-3cr An examination of the office of president, with attention to constitutional foundations, evolution, structure, powers, and functions; some comparisons between presidential and parliamentary systems and between offices of president and governor.	PLSC 370 The Practice of Public Administration 3c-0l-3cr Examines the environment and structure of public sector organizations; organizational theory and organizational culture; intergovernmental and intra-organizational relations; leadership and ethics; the planning, management, and evaluation of programs and services; the administration of human resources; budgeting and finance; and management information. Emphasizes the integration of theory and practice through case studies and projects.
	PLSC 371 Issues in Public Administration 3c-0l-3cr An intensive study of the role of federal agencies and their administrators in determining and developing public policy. Public administration in practice is emphasized by utilizing case studies.
	PLSC 382-387 Political Systems 3c-0l-3cr Suggested Prerequisites: PLSC 280 and/or 285 An intensive, comparative study of the government and politics of a selected region. PLSC 382 Africa (currently inactive); PLSC 383 Asia (currently inactive); PLSC 384 Middle East (currently inactive); PLSC 385 Central and Eastern Europe (currently inactive); PLSC 387 Latin America (currently inactive)

PLSC 388 Dimensions of National Security 3c-0l-3cr

Deals with national security problems including decision making and budgeting, levels of strategy, the utility of force, and the impact of the military on American society.

PLSC 389 International Development Strategies 3c-0l-3cr

Suggested Prerequisites: PLSC 280 and/or 285

Political characteristics of emerging nations; impact of economic and social change on political structure; evolving patterns of political development; and techniques of nation building.

PLSC 404 Women and Politics 3c-0l-3cr

Focuses on the role of women in political life and policies that especially affect women in both developing and developed countries.

PLSC 405 Sexuality and Law 3c-0l-3cr

Critically examines the role of law in regulating sexuality in the United States. Analyzes legal and constitutional questions regarding sex, sexual orientation, and identity. Using statutory law and written judicial opinions, the course explores the evolution of legal approaches to issues including regulation of married and non-married sexual activity, same-sex marriage and sexual orientation, and First Amendment protections of LGBT rights. Emphasizes the role of the Supreme Court's interpretation of the Constitution, especially of due process and equal protection.

PLSC 422 International Law and Organizations 3c-0l-3cr

A survey of the main concepts and history of international law and an analysis of the major international organizations such as the United Nations, European Union, and Organization of American States. Knowledge of how such organizations operate is essential to understand international relations.

PLSC 465 Intelligence Process and Policy 3c-0l-3cr

Demystifies intelligence and focuses on the critical thinking and intellectual skills the process of intelligence requires to provide government, private, and nonprofit decision makers with useful information on which to base sound decisions. The process involves collecting, analyzing, and providing data to those decision makers. Students also examine the impact of the structure and role of the intelligence community in formulating US national security policy.

PLSC 480 Political Science Seminar 3c-0l-3cr

Readings and written assignments on a specific topic determined by the instructor in charge.

PLSC 481 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

PLSC 482 Independent Study var-3cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

PLSC 493 Political Science Internship var-2-12cr

Prerequisites: 9cr in political science with 2.0 GPA; PLSC 111; approval of internship director and chairperson

Practical experience in government and politics. Log and research project required. Course grade determined by the instructor. Maximum of 6cr applied to minimum in major; maximum of 3cr applied in minor.

PNAF: Pan-African Studies
College of Humanities and Social Sciences
PNAF 131 Introduction to Pan-African Studies 3c-0l-3cr

A multidisciplinary introduction to Africa and the African diaspora. Explores the effects of Africa's history, in particular colonialism and indepen-

dence, on present-day Africa; examines the relationship between Africa and the African diaspora with special attention to African arts, social systems, and political and economic development; looks at Africa's contribution to contemporary culture in the Americas.

PNAF 482 Independent Study var-1-3cr

Prerequisite: Prior approval through advisor, faculty member, program coordinator, dean, and Office of the Provost

Students with interest in an independent study of a Pan-African studies-related topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

PNAF 493 Pan-African Studies Internship var-3-12cr

Offers practical experience in a field in which knowledge of and understanding of the Pan-African world and/or people of African descent are directly utilized.

PSYC: Psychology
Department of Psychology
College of Natural Sciences and Mathematics
PSYC 101 General Psychology 3c-0l-3cr

An introduction to the scientific study of behavior and mental processes.

PSYC 280 Psychological Inquiry 3c-0l-3cr

Prerequisites: PSYC 101, psychology minors

Introduces students minoring in psychology to issues central to carrying out and interpreting empirical research in the field. Students become more sophisticated consumers of empirical research findings. May not be taken for credit after successful completion of PSYC 290.

PSYC 290 Research Design and Analysis I 3c-2l-4cr

Prerequisites: MATH 217, PSYC 101

A laboratory course devoted to designing, conducting, and evaluating results of psychological experiments.

PSYC 291 Research Design and Analysis II 3c-2l-4cr

Prerequisites: PSYC 101, grade of "C" or better in PSYC 290

A continuation of Research Design and Analysis I.

PSYC 310 Developmental Psychology 3c-0l-3cr

Prerequisite: PSYC 101

A comprehensive study of all factors that contribute to human development from conception through death, particularly as they relate to psychological development of the individual. May receive credit toward the psychology major or minor for only one of PSYC 310, 311, or 315.

PSYC 311 Child Psychology 3c-0l-3cr

Prerequisite: PSYC 101

The study of factors that influence total development and behavior of child. Current theories and research are considered, with focus on optimum development of individual. May receive credit toward the psychology major or minor for only one of PSYC 310, 311, or 315.

PSYC 312 Adult Development and Aging 3c-0l-3cr

Prerequisite: PSYC 101

A survey of physiological, cognitive, emotional, and social issues affecting the young adult, the middle-aged, and the elderly. Includes an examination of significant adult life crises.

PSYC 313 Non-normative Development in Adulthood (CAAST) 3c-0l-3cr

Prerequisite: PSYC 101

A survey of non-normative transitions for younger, middle-aged, and older adults. Emphasis on how various losses, neurocognitive disorders, abuse, and neglect affect adult development. A component of the interdisciplinary Child and Adult Advocacy Studies (CAAST) minor and certificate programs. May not get credit for both PSYC 312 and 313.

PSYC 314 Child and Adolescent Psychopathology (CAAST) 3c-0l-3cr

Prerequisite: PSYC 101

An in-depth examination of theories and research related to risk factors and protective factors in the development of children and adolescents. Highlights how physical, cognitive, and social development can be impacted by violence. A component of the interdisciplinary Child and Adult Advocacy Studies (CAAST) minor and certificate programs. May not get credit for both PSYC 311 and 314.

PSYC 315 Experimental Development Psychology 3c-2l-4cr

Prerequisite: PSYC 280 or 290

Studies human development from conception to death with emphasis on the physical, cognitive, and emotional domains. Students are involved in observation and data collection. May receive credit toward the psychology major or minor for only one of PSYC 310, 311, or 315.

PSYC 320 Personality 3c-0l-3cr

Prerequisite: PSYC 101

Provides comparative analysis of major representative traditional and contemporary theories of personality.

PSYC 321 Abnormal Psychology 3c-0l-3cr

Prerequisite: PSYC 101

The description, causes, and treatment of behaviors labeled abnormal in our society are studied from experimental and clinical points of view.

PSYC 322 Violence Across the Life Span 3c-0l-3cr

Prerequisites: PSYC 101, department permission

A multidisciplinary and contextual approach to understanding interpersonal violence across the lifespan. Emphasizes skill building in mandated reporting, forensic interviewing, documentation of violent incidents, working as a member of a multidisciplinary team, and being an advocate for violence prevention. May be taken for major or minor credit. Includes simulations of forensic interviews that take place outside of class time and that are required aspects. Simulation experiences provide practice carrying out a multidisciplinary approach to forensic investigations.

PSYC 325 Psychological Testing and Measurement 3c-2l-4cr

Prerequisites: MATH 217, PSYC 101, sophomore standing

Presents a series of focused discussions on principles, methods, and issues of psychological measurement. Also describes the major psychological tests currently in use and illustrates the administration and scoring of these tests. The laboratory activities are intended to provide hands-on experiences in computerized analysis and evaluation of psychological tests, to demonstrate test administration and scoring in practical settings, and to enhance the understanding of psychological testing through class projects.

PSYC 330 Social Psychology 3c-0l-3cr

Prerequisite: PSYC 101

The study of the effects of the social environment on human behavior. Topics include perception of persons, attitude formation and change, and small-group interaction.

PSYC 331 Environmental Psychology 3c-0l-3cr

Prerequisite: PSYC 101

The study of the relationship between human behavior and its environmental context. Emphasizes the physical environment, both natural and built.

PSYC 332 Community Psychology and Prevention Science (CAAST) 3c-0l-3cr

Prerequisite: PSYC 101 or instructor permission

An introduction to the guiding principles of community psychology with an emphasis on prevention. Employs teamwork and service activities to apply students' new knowledge in addressing social and/or health issues impacting their communities. A component of the Child and Adult Advocacy Studies (CAAST) curriculum.

PSYC 341 Conditioning and Learning 3c-2l-4cr

Prerequisites: PSYC 101, 290

An examination of the basic principles of learning and related phenomena; discussion of classical conditioning, discrimination learning, and aversive control of behavior.

PSYC 342 Human Cognition: Memory and Thinking 3c-2l-4cr

Prerequisites: PSYC 101, 290

A study of methods and findings in areas of human memory and human information processing. May not receive credit toward the psychology major or minor for both PSYC 342 and 345.

PSYC 345 Introduction to Human Cognition 3c-0l-3cr

Prerequisite: PSYC 101

An overview of cognitive psychology. The Information Processing Model is contrasted with its predecessor, Behaviorism, and its contemporary challenger, Connectionism. May not receive credit toward the psychology major or minor for both PSYC 342 and 345.

PSYC 350 Physiological Psychology 3c-2l-4cr

Prerequisites: PSYC 101, 290

A study of the relationship between behavior and the anatomy and physiology of the nervous system. May not receive credit toward the psychology major or minor for both PSYC 350 and 356.

PSYC 356 Biopsychology 3c-0l-3cr

Prerequisite: PSYC 101

A study of the relationship between behavior and the anatomy and physiology of the nervous system. May not receive credit toward the psychology major or minor for both PSYC 350 and 356.

PSYC 359 Sensation and Perception 3c-2l-4cr

Prerequisite: PSYC 290

Introduces the biological and psychological processes that determine our perceptions and their relationships to physical properties of the environment. Laboratory work provides the opportunity to explore lecture and textbook topics firsthand and to collect and analyze psychophysical data.

PSYC 360 Sensory Perception 3c-0l-3cr

Prerequisite: PSYC 101

Introduces the biological and psychological processes that determine our perceptions and their relationships to physical properties of the environment. May receive credit toward the psychology major or minor for only one of PSYC 360 or 359.

PSYC 371 Human Motivation 3c-0l-3cr

Prerequisite: PSYC 101

A systematic study of how behavior is initiated, sustained, directed, and terminated. Current theories in this area are critically reviewed.

PSYC 372 Drugs and Behavior 3c-0l-3cr

Prerequisites: PSYC 101, junior standing or permission

A survey of the current knowledge concerning the actions of drugs. Includes legal and social issues surrounding drug use, hazard potential of commonly used drugs, review of current theories and issues regarding the use of drugs in psychotherapy, and consideration of treatment approaches for addiction.

PSYC 374 Stress and Coping 3c-0l-3cr

Prerequisite: PSYC 101

Fundamental concepts and findings in stress and stress-related disorders. Relationships of stress to disease and methods for coping with stress are presented.

PSYC 378 Psychology of Death and Dying 3c-0l-3cr

Prerequisite: PSYC 101

Theories and research which delineate the psychological factors affecting the dying person as well as those persons close to the one who is dying are discussed.

PSYC 379 Psychology of Human Sexuality **3c-0l-3cr****Prerequisite:** PSYC 101

An overview of the psychological issues and research relevant to sexuality with an emphasis on gender roles. Social, psychological, and gender perspectives are used to examine a number of topics, including contemporary sexual attitudes, sexual response, sexual relationships, sexual dysfunction, sexual variations, sexual preference, and sexual violence. Research pertaining to each topic is presented. Students are encouraged to critically evaluate research and theory and to make connections between the material and their personal experience.

PSYC 380 Gender and Violence **3c-0l-3cr****Prerequisite:** PSYC 101

A multidisciplinary approach to understanding interpersonal violence (across the life span) as impacted by gender. Analyzes interpersonal violence from a psychological, gendered, and social construction perspectives. Includes definitions and descriptions of forms of violence. Addresses the inter-connections and co-occurrence of violent incidents. Explores the relation of gender to the experience, reaction, and recovery from violence. An analysis of how gender roles contribute to interpersonal violence. Examines approaches to intervention and prevention of violence. Course is a component of the Child and Adult Advocacy Studies (CAAST) curriculum.

PSYC 388 Forensic Psychology **3c-0l-3cr****Prerequisite:** PSYC 101

An examination of current topics at the interface between psychology and the legal system.

PSYC 389 Psychology of Music **3c-0l-3cr****Prerequisite:** PSYC 101

An overview of theory and research on the psychological foundations of music, including music cognition, music perception, and the social psychology of music.

PSYC 390 Industrial-Organizational Psychology **3c-0l-3cr****Prerequisites:** MATH 214 or 217, PSYC 101

The study of psychological principles in work organizations; application of psychological theory to the understanding and explanation of individual behavior and experience in work organizations. May not be taken for credit after successful completion of PSYC 425.

PSYC 410 Historical Trends in Psychology **3c-0l-3cr****Prerequisites:** PSYC 101, junior or senior standing or permission

A comprehensive overview of historical antecedents of contemporary psychology with an emphasis on their implications for future developments in the field.

PSYC 411 Psychology of Women **3c-0l-3cr****Prerequisites:** PSYC 101, junior or senior standing or instructor permission

A critical examination of the assumptions about women that are held by the discipline of psychology, considering both current research and individual experience. The psychological effects of socialization on sex role identity, achievement, interpersonal power, mental health, and critical incidents in female development are discussed in the context of relevant concepts from developmental and social psychology.

PSYC 450 Introduction to Clinical Psychology **3c-0l-3cr****Prerequisites:** PSYC 101, 320, 321, instructor permission

An overview of clinical psychology, with emphasis on clinician's use of methods of evaluation and on treatment and modification of behavior.

PSYC 480 Honors Seminar in Psychology **3c-0l-3cr**

A seminar in the graduate tradition with a specialized topic. May be taken more than once to a maximum of 6cr.

PSYC 481 Special Topics in Psychology **var-1-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are offered primarily for upper-level undergraduate students. May be taken more than once to a maximum of 6cr.

PSYC 482 Independent Study in Psychology **var-1-3cr****Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and the Office of the Provost

Individual students pursue their particular interests in psychology in consultation with a member of the staff. May be taken more than once to a maximum of 6cr. Approval is based on academic appropriateness and availability of resources.

PSYC 483 Honors Thesis **var-1-6cr****Prerequisites:** Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

PSYC 493 Psychological Practicum **var-1-12cr****Prerequisites:** PSYC 101, department permission

Under supervision of Psychology Department, selected students receive experience in application of psychological techniques. May be taken more than once to a maximum of 12cr.

PUBH: Public Health**Colleges of Health and Human Services, Humanities and Social Sciences, and Natural Sciences and Mathematics****PUBH 122 Foundations of Public Health** **3c-0l-3cr**

Defines public health and its origins and foundations as a field of inquiry.

Explains the context of modern public health systems, major approaches to analyzing and understanding human health patterns, and the structure of public health systems in the United States.

PUBH 306 Research Design and Analysis in Public Health **3c-0l-3cr****Prerequisites:** BIOL 301; MATH 216 or 217; PUBH 122

Introduces methodological and ethical research principles in public health. Includes study designs, data collection, human subjects protection, quantitative and qualitative approaches, program evaluation, and community-based participatory research applications. Applies relevant case studies to emphasize research methods used, such as hypothesis generation and testing, study design, data collection and analysis, searching and critically evaluating research literature, identifying strengths and weaknesses of research studies, and drawing conclusions from research evidence.

PUBH 493 Internship in Public Health **var-3-6cr****Prerequisites:** PUBH 122, 306; BIOL 301; SOC 442; ECON 360;

GEOG 316; NURS/ELR 314; NURS 410, 444; senior status

A capstone opportunity for students to analyze and apply public health theories/models and research into their specific concentrations and experience the role of the public health professional. Consists of weekly one-hour seminar and weekly mentorship experience with public health professional 120-240 hours.

QBUS: Quantitative/Business**Department of Information Systems and Decision Sciences**
Eberly College of Business and Information Technology

Note: Except for accounting, business education, and nonbusiness majors who have met the required prerequisites, students scheduling 300 and 400 courses are expected to have achieved junior standing as described in the Eberly College of Business and Information Technology Academic Policies.

QBUS 215 Business Statistics **3c-0l-3cr****Prerequisite:** MATH 214

Expands on the probabilistic concepts developed in MATH 214 to orient the student toward managerial decision making using quantitative methodologies. Topics include classical regression analysis, forecasting, Bayesian decision theory, linear programming, and simulation.

QBUS 380 Introduction to Management Science 3c-0l-3cr**Prerequisite:** QBUS 215

Discussion and application of mathematical models used in managerial decision making. Linear programming, Markov processes, queuing theory, EOQ models, and simulation techniques are among the topics covered.

QBUS 450 Data Science for Business 3c-0l-3cr**Prerequisite:** QBUS 215

An introduction to the practice of data science with a broad set of data analytic skills based on building real analytic applications on a variety of real data, including big data, unstructured data, and textual data. Skills include accessing and transferring data, applying various analytical frameworks, applying methods from machine learning and data mining, conducting large-scale rigorous evaluations with business goals in mind, and visualizing data analytic results.

QBUS 482 Independent Study var-1-3cr**Prerequisite:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Students with interest in independent study of a topic not offered in the curriculum may propose a plan of study in conjunction with a faculty member. Approval is based on academic appropriateness and availability of resources.

REAL: Real Estate**Department of Finance and Legal Studies****Eberly College of Business and Information Technology****REAL 382 Real Estate Fundamentals 3c-0l-3cr**

Acquaints the student with the language, principles, and laws that govern the business of real estate. Emphasizes the underlying concepts of land, property, rights in realty, and the means, methods, and laws that govern the conveyance of these rights. Required course for taking the Pennsylvania Real Estate Sales Exam.

REAL 383 Real Estate Practice 3c-0l-3cr**Prerequisite:** REAL 382

One of the two courses required by the Pennsylvania Real Estate Commission to take the Pennsylvania Real Estate Sales Licensing Exam. Topics include real estate brokerage, the real estate market, listing contracts, the Pennsylvania Real Estate Licensing and Registration Act and its rules and regulations, appraisal, property management, fair housing laws, ethical practices for real estate professionals, and real estate math.

RESP: Respiratory Care**Department of Nursing and Allied Health Professions****College of Health and Human Services****RESP 101 The Profession of Respiratory Care 1c-0l-1cr**

Introduces the health care environment and specifically the respiratory care profession. Students visit a hospital respiratory care department and observe basic respiratory patient care procedures.

RESP 326 Respiratory Care Clinical Practice I 3c-0l-3cr

First exposure to patient care. An introduction to and practice of basic respiratory care treatment modalities.

RESP 327 Pharmacology 3c-0l-3cr

An introduction to pharmacology and therapeutics. Emphasizes the drugs used in respiratory care. Drug classification, action, usage, dosage, and availability are discussed.

RESP 328 Introduction to Respiratory Care 4c-0l-4cr

Topics include medical terminology and an overview of cellular structure and function. Emphasizes neurophysiology, respiratory anatomy, and physiology.

RESP 329 Respiratory Care Equipment 4c-0l-4cr

An introduction to respiratory therapy equipment, related procedures and principles, techniques, and theory of mechanical ventilation. Special emphasis is given to oxygen delivery systems and the rationale for their use.

RESP 330 Cardiopulmonary Resuscitation 2c-0l-2cr

A comprehensive analysis of the principles and practices of numerous methods of resuscitation.

RESP 333 Respiratory Care Clinical Practice II 3c-0l-3cr

Treatment procedures introduced in Clinical I are continued with greater emphasis on independence. Specialty rotations are added to broaden exposure to respiratory care and critical care.

RESP 334 Respiratory Care Instrumentation and Application 4c-0l-4cr

Provides a comprehensive knowledge of mechanical ventilation. Discusses the care of critically ill and physiologic consequences of mechanical ventilation.

RESP 335 Patient Care Skills 3c-0l-3cr

An overview of the history of respiratory care and nursing. Topics include medical records, infection control, sterilization, and psychosocial aspects of illness.

RESP 336 Cardiopulmonary Evaluation and Clinical Correlation 4c-0l-4cr

Disease states of the pulmonary and related systems are investigated in progression from etiology through treatment and prognosis.

RESP 337 Introduction to Pulmonary Function Studies 1c-0l-1cr

Introduces the basic principles of lung volumes, capacities, and their measurement. Blood gas sampling and electrodes are also explored.

RESP 342 Preceptorship in Respiratory Care 1c-0l-1cr**Prerequisites:** RESP 326, 328, 329, 330, permission

An opportunity to gain additional clinical experiences in a supervised health care setting. Participants must meet university and sponsoring preceptorship requirements. May be repeated for a maximum of 5cr. A minimum of 40 hours is required for each credit.

RESP 425 Clinical Case Studies 3c-0l-3cr

Increases the working knowledge of disease states commonly experienced by patients in the critical care setting. Emphasizes recognition and treatment of various disease states. Explores methods for evaluation and treatment of clinical oxygenation disturbances and acid-base disorders. Clinical simulations, case studies, and patient management problems reviewed and discussed. Emphasizes appropriate information-gathering and decision-making techniques.

RESP 426 Respiratory Care Clinical Practice III 4c-0l-4cr

Respiratory care treatment procedures are continued with emphasis on improving proficiency and refining skills in adult general and critical care areas. The focus is on advanced skills related to mechanical ventilation. Specialty rotations are continued.

RESP 428 Essentials of Electrocardiography 2c-0l-2cr

Acquaints the student with basic principles in cardiac electrodiagnostics. Topics include the technique of ECG testing and fundamentals of ECG arrhythmia recognition.

RESP 429 Design and Function of a Respiratory Care Program 2c-0l-2cr

Basic management principles as they apply to the hospital setting; in particular, respiratory care departments and schools are discussed.

RESP 430 Pulmonary Function Studies 3c-0l-3cr**Prerequisite:** RESP 337

Introduces the advanced diagnostic studies and equipment necessary for diagnosing and quantifying the various lung diseases. Included are advances in invasive studies and rehabilitation evaluation tools.

RESP 431 Pediatric Respiratory Care 1c-0l-1cr**Prerequisites:** RESP 334, 336

The application of respiratory care to children ages 6 months to 15 years is explored. Cardiopulmonary pathophysiology and treatment for the following disorders are discussed: croup, epiglottitis, asthma, cystic fibrosis, congenital heart defects, and abdominal and chest wall defects.

RESP 433 Respiratory Care Clinical Practice IV 4c-0l-4cr

Respiratory care treatment procedures are continued with emphasis on functioning with greater independence and improving proficiency and refining skills in adult general and critical care areas. Experience in non-acute health care settings is included. Specialty rotations are continued. Provides opportunities to develop leadership skills.

RESP 434 Neonatal Respiratory Care 3c-0l-3cr

Basic terminology, anatomy, and pathophysiology of obstetric, fetal, neonatal, and pediatric patients are presented.

RESP 436 Respiratory Care Teaching 2c-0l-2cr

An introduction to respiratory education.

RESP 437 Methods in Critical Care 2c-0l-2cr

Critical care diagnostic and therapeutic modalities pertinent to respiratory care are discussed. Topics include invasive and noninvasive cardiac monitoring, pulmonary monitoring, neurological assessment, ventilator commitment, and discontinuance.

RESP 438 Cardiopulmonary Rehabilitation 1c-0l-1cr

Techniques and principles associated with cardiopulmonary rehabilitation programs are surveyed. Topics also include the management of chronic pulmonary disease in the home and the application of respiratory equipment and mechanical ventilators in this setting.

RGPL: Regional Planning
Department of Geography and Regional Planning
College of Humanities and Social Sciences

RGPL 103 Global Cities: Issues in Planning and Development 3c-0l-3cr

An introduction to the developmental and regional planning issues facing contemporary Western and non-Western cities. A theoretical framework sets up detailed case studies of developmental issues that are affecting urban populations in Africa, Asia, and Central and South America. Issues include such traditional topics as migration, population, poverty, and indigenous and colonial legacies, but environmental and infrastructure problems such as water supply, food security, energy, solid waste, disaster planning, and transportation are also analyzed and discussed. (Also offered as GEOG 103; may not be taken as duplicate credit.)

RGPL 203 Planning History 3c-0l-3cr

Examines the history of the planning profession and how the planner's role has evolved over time. Considers the historical context of planning solutions relative to contemporary urban problems by examining the planning tradition from its early antecedents through modern times. Particular attention is directed toward the genesis of planning in the United States during the mid-19th and early 20th centuries. Significant plans, people, projects, and movements in the history of planning are discussed in relation to the evolving traditions of the planning profession.

RGPL 213 Cartography I 3c-0l-3cr

Introduces principles of thematic map construction. Emphasizes techniques of choropleth mapping and the production of scientific graphs and charts. (Also offered as GEOG 213; may not be taken for duplicate credit.)

RGPL 313 Cartography II 3c-0l-3cr

Prerequisite: RGPL 213

Gives an understanding of the compilation and use of maps and quantitative data. Develops skills essential to the construction of various types of maps. (Also offered as GEOG 313; may not be taken for duplicate credit.)

RGPL 314 Map and Photograph Interpretation 3c-0l-3cr

Maps and air photographs, along with remote sensing materials, permit inventory and analysis of geologic, land use, urban development, and other landscape phenomena. The understanding of these materials and of associated tools for their use is presented. (Also offered as GEOG 314; may not be taken for duplicate credit.)

RGPL 316 Introduction to Geographic Information Systems 3c-0l-3cr

Presents automated methods for creating, maintaining, and analyzing spatial data. Includes (1) specialized GIS hardware and software, (2) vector vs. raster vs. object-oriented spatial data structures, (3) creation and manipulation of geographic data files, (4) database design and management concepts, (5) spatial analysis, and (6) cartographic design. (Also offered as GEOG 316; may not be taken for duplicate credit.)

RGPL 332 Urban Geography 3c-0l-3cr

Basic concepts of urban geography including site, situation, function, urban land use, urban structure, and urban hierarchy are introduced. Relationships between urban geography and urban planning are explored. (Also offered as GEOG 332; may not be taken for duplicate credit.)

RGPL 333 Trade and Transportation 3c-0l-3cr

Deals with the spatial aspects of transportation systems and their use. Discusses circulation, accessibility, time and distance concepts, and trade patterns. (Also offered as GEOG 333; may not be taken for duplicate credit.)

RGPL 341 Climatology 3c-0l-3cr

Examines the elements of weather and climate on earth. The location and causes of global climatic regions are examined in relation to moving pressure and wind systems. Also considers the climatic history of the planet and recent human modifications of the atmospheric environment. (Also offered as GEOG 341; may not be taken for duplicate credit.)

RGPL 342 Physiography 3c-0l-3cr

Focuses on landform types and their spatial distribution. Emphasizes the tectonic forces that build landforms and the weathering and erosional processes that erode and shape surface features. The relationship between human activities and landforms is also considered. (Also offered as GEOG 342; may not be taken for duplicate credit.)

RGPL 343 Geography of Fresh Water Resources 3c-0l-3cr

Students learn about surface and groundwater as a resource with unique properties. Fresh water is defined physically by storage in the hydrologic cycle and the values assigned by different cultures. Problems featured relate to consumptive and withdrawal water uses, the problems of water supply and scarcity, water law and its inconsistencies, flooding and floodplain management, sources of contamination and pollution, wetlands, and case studies of selected river basins. (Also offered as GEOG 343; may not be taken for duplicate credit.)

RGPL 345 Biogeography for Environmental Managers 3c-0l-3cr

Prerequisite: One course from GEOG 341, 342, BIOL 103, 115

Examines the distribution of plants and animals across the earth's surface, as influenced by natural and human processes. Emphasizes landscape and regional habitat dynamics as they relate to environmental planning and management. Field trips supplement lectures and readings. (Also offered as GEOG 345; may not be taken for duplicate credit.)

RGPL 350 Introduction to Planning 3c-0l-3cr

An introduction to the profession and activity of contemporary American urban and regional planning. Emphasizes land use control, design, growth management, and development regulation. The legal and institutional bases of planning practice are covered as well.

RGPL 352 Planning Methods 3c-0l-3cr

Research, analytical design, and plan-making techniques in urban and regional planning. Examines basic items necessary to prepare urban and regional comprehensive plans.

RGPL 404 Transportation Planning 3c-0l-3cr

Prerequisite: GEOG/RGPL 333 or RGPL 350, or one course from the economic geographer concentration

Introduces the major themes and methods of transportation planning, particularly in an urban context. It is project oriented and supported by readings from the scholarly literature covering themes such as modes of transit, land use implications, and commercial development. Reading assignments are organized topically and coordinated with two workbook projects that develop applied skills. Topics include theory, empirical description, and

methodological practice. (Also offered as GEOG 404; may not be taken for duplicate credit.)

RGPL 410 Community Participation and Civic Engagement Seminar **3c-0l-3cr**
Prerequisite: RGPL 350

Introduces recent participatory planning and civic renewal initiatives within “communities of place” in the United States. Particular attention is directed toward understanding how planners, citizens, community-based organizations, and local institutions engage in the public work of civic creativity, asset mobilization, and community development. Participatory planning techniques and community facilitation tools are discussed and demonstrated. Civic associations in Indiana County and southwest Pennsylvania are highlighted as cases.

RGPL 412 Community Planning Practicum **3c-0l-3cr**
Prerequisite: RGPL 352

This senior seminar and workshop constitute a capstone course that focuses on recent research in the major field. Students carry out an applied research project on a topic of local or regional importance. (Also offered as GEOG 412; may not be taken for duplicate credit.)

RGPL 415 Remote Sensing **3c-0l-3cr**

Deals with air photographs, satellite imagery, thermal sensing, and radar imagery and their application to deriving information about the earth’s physical and cultural landscapes. (Also offered as GEOG 415; may not be taken for duplicate credit.)

RGPL 420 Technical Issues in Geographic Information Systems **3c-0l-3cr**
Prerequisite: RGPL 316 or GEOG 419

Uses project-based approach to develop and maintain a geographic information system (GIS). Designs and implements functional systems through cooperative learning. Covers methods for designing GIS to user specification, data collection, data input, project management, and system documentation. (Also offered as GEOG 420; may not be taken for duplicate credit.) (Offered as RGPL 417 before 2016-17.)

RGPL 426 Environmental Land Use Planning **3c-0l-3cr**
Prerequisite: RGPL 350 recommended

Reviews and instructs principles, techniques, and applications for the environmental land use planning process. Focuses on surface water and deals with topics such as land use, stream monitoring, stream conservation and restoration, and watershed management. Students who complete the course are exposed to environmental planning legislation and policy, best management practices, and applied techniques.

RGPL 440 Conservation: Environmental Analysis **3c-0l-3cr**

Problems of exploitation and utilization of regional resources such as soils, minerals, forests, and wildlife are considered in relation to population growth and regional planning and development. (Also offered as GEOG 440; may not be taken for duplicate credit.)

RGPL 453 Planning Design Studio I **3c-0l-3cr**

Introduces professional graphic communications. Emphasizes the use of 2-D computer-aided design (CAD) applications, plan graphics, and professional standards to represent and solve basic physical planning problems.

RGPL 454 Planning Design Studio II **3c-0l-3cr**

Prerequisites: RGPL 350, 353 or instructor permission
 Introduces the activity of design, design programming, design decision making, and design communications. Focuses specifically on the development of site planning, site analysis, and site design skills as well as the translation of design program elements into physical form.

RGPL 458 Land Use Law **3c-0l-3cr**
Prerequisite: RGPL 350

Introduces principles of land use law. Focus is on federal constitutional principles and key Supreme Court cases, especially as they relate to actions of local units of government and municipal planning practice. Deals with the present state of land use law and with current trends and issues.

RGPL 462 Planning Policy, Implementation, and Administration **3c-0l-3cr**

Prerequisite: RGPL 458

Focuses on the planning and implementation of policies to manage the location, timing, type, and intensity of land development. Explores the multi-step process from community plan to project completion. Exposes students to the public environment in which community plans are developed and implemented and walks them through the real-world problems of identifying projects, building agency and interagency consensus, finding funding, putting together a project plan, project management, personnel, and budget to project completion. (Also offered as GEOG 462; may not be taken for duplicate credit.)

RGPL 468 Planning Theory **3c-0l-3cr**

Prerequisite: RGPL 412

A seminar on contemporary debates concerning planning traditions, principles, and practices. The activity of planning is investigated from several theoretical frames and analytic positions.

RGPL 493 Internship **var-1-12cr**

A professional learning experience with emphasis on application of academic background. Open to majors and minors in regional planning with a total of 60cr and 15cr in the major. See internship supervisor for additional information.

RLST: Religious Studies
Department of Religious Studies
College of Humanities and Social Sciences

RLST 100 Introduction to Religion **3c-0l-3cr**

An introduction to the academic study of religion through an examination of various dimensions of religious expression and traditions. Covers such areas as problems about definition of religion; approaches to the study of religion; the goals, language, and rituals of religion; cases of religious experience; faith, disbelief, and alternatives to religion; religion and the sociocultural context.

RLST 110 World Religions **3c-0l-3cr**

A comparative study of the history, teaching, and rituals of the major religions of the world and their influence on contemporary society. This non-sectarian approach to religions emphasizes comparisons/contrasts between Western and non-Western religious traditions as well as the contemporary global nature of Western traditions.

RLST 114 Biblical Hebrew I **3c-0l-3cr**

Enables students to read the prose of Biblical Hebrew or Classical Hebrew—that is, the major language in which the Hebrew Bible/Old Testament was written during the first millennium B.C.E. By learning the fundamentals of Biblical Hebrew grammar and vocabulary, students thus acquire the tools and skill to do translation of this important ancient text for themselves. (Also offered as CRLG 114; may not be taken for duplicate credit.)

RLST 164 Biblical Hebrew II **3c-0l-3cr**

Prerequisite: RLST/CRLG 114

A continuation of Biblical Hebrew I with the same objective: to enable students to read the prose of Biblical Hebrew or Classical Hebrew. By learning the fundamentals of Biblical Hebrew grammar and vocabulary, students thus acquire the tools and skill to do translation of this important ancient text for themselves. (Also offered as CRLG 164; may not be taken for duplicate credit.)

RLST 200 Religion and Culture: Their Interaction **3c-0l-3cr**

A systematic study of the interaction of religions and various components of culture as a way of understanding the phenomenon of religion. The approach is functional and descriptive; it uses case studies that are chronologically and culturally diverse, covering such areas as religion and politics, economics, arts, science, and literature.

RLST 220 Buddhism **3c-0l-3cr**

Explores the history, teachings, and practices of the main schools of Buddhism. Considers the tradition both as it has developed in Asia as well as its modifications as it has been introduced into Western societies.

RLST 245 Women and Religion **3c-0l-3cr**

Prerequisite: RLST 110 or instructor permission

Examines women's roles and experiences within some of the world's major religious traditions, both past and present. In exploring patterns and instances of the empowerment and oppression of women, the course pays careful attention to feminist critiques.

RLST 250 Understanding the Bible **3c-0l-3cr**

An academic introduction to the sacred writings known as the Bible. Acquaints students with the basic contents and major themes of the books of the Bible (Hebrew Bible/Old Testament and New Testament), as well as the goals and methods of the most recent scholarship in biblical studies.

RLST 290 Christianity **3c-0l-3cr**

A study of the beliefs, practices, significant people, history, and cultural impact of Christianity.

RLST 311 Eastern Philosophy **3c-0l-3cr**

An examination of texts from East Asia and South Asia that address such philosophical areas as the nature of human knowledge, the nature of reality, and ethics. May include readings from such traditions as Buddhism, Confucianism, Daoism, and/or Hinduism.

RLST 329 Philosophy of Religion **3c-0l-3cr**

Critically examines temporally and culturally diverse understandings of the human religious impulse. Considers theories regarding the sacred and the existence of divinity, the meaning of being human, the interactions of culture and religious interpretations of human experience, good and evil, authority, knowledge, and ethical responsibility.

RLST 345 Women in the Bible **3c-0l-3cr**

Prerequisite: One religious studies or womens and gender studies course or instructor permission

Surveys and examines the stories and issues concerning women in the Bible and introduces the questions and methods of research that the contemporary world and feminist biblical scholars bring to them.

RLST 360 African Religions **3c-0l-3cr**

An examination of the nature of African traditional religion and how traditional religion, Islam, and Christianity coexist and influence one another.

RLST 365 Native North American Religions **3c-0l-3cr**

An introduction to the indigenous religions of North America and to the peoples who practice these rich and varied approaches to the sacred. Not only examines major religious themes and dimensions (myth, ritual, ethics, etc.), but includes a historical perspective on Native North American life-ways. This perspective involves discussion of the clash with Euro-American values and contemporary Native religious responses to social crisis and change. (Also offered as ANTH 365; may not be taken for duplicate credit.)

RLST 373 Advanced Studies in Buddhism **3c-0l-3cr**

Prerequisite: RLST 110 or 210 or 220 or instructor permission

Explores in depth a particular aspect of the history, teachings, or practices of Buddhism. In certain semesters, focuses on how the tradition has evolved in a particular country, such as India, Sri Lanka, Thailand, Tibet, China, or Japan. In other semesters, explores the development of one particular school of the tradition, such as Pure Land or Zen Buddhism. Yet other semesters will consider a specific topic, such as Buddhist scriptures, ethics, or ritual.

RLST 375 Religions of India **3c-0l-3cr**

A study of Islam including historical and theological foundations, developments of thought, contemporary expressions, and encounters with the modern world.

RLST 380 Islam **3c-0l-3cr**

An introduction to and basic survey of the history, beliefs, traditions, institutions, and practices of Islam, with attention to its development and participation in contemporary societies globally.

RLST 480 Seminar in Religious Studies **3c-0l-3cr**

Prerequisite: Religious studies students or instructor permission

An advanced forum for detailed exploration of a single topic or single author, subject to instructor's choice. Enrollment limited to religious studies majors and other students by invitation or permission.

RLST 481 Special Topics **var-l-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are offered primarily for upper-level undergraduate students.

RLST 482 Independent Study **var-1-6cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Individual students wishing to pursue religious studies interests not covered in the department's regular offering may do so by approval. Upon approval, students are guaranteed at least five hours of faculty time per credit. All programs of study must be accepted by the department as a whole. May be taken more than once to maximum of 6cr. (This option is available to both religious studies majors and nonmajors.)

RLST 482 Independent Study: Honors **3c-0l-3cr**

Prerequisites: 3.00 GPA, 15cr in RLST, 3.20 GPA in departmental courses
Majors in religious studies are invited to take 3cr of independent-study-designated Honors Project. Upon satisfactory completion, graduation with departmental honors is possible.

RLST 483 Honors Thesis **var-1-6cr**

Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

RLST 485 Selected Topics in Feminist Studies of Religion **3c-0l-3cr**

Prerequisite: One religious studies or womens and gender studies course or instructor permission

Offers rotating topics in feminist studies in religion by alternating professors in the Department of Religious Studies. Such topics may include "Contemporary Feminist Spirituality Movements," "Goddesses in the Ancient Near East," "Feminist Biblical Scholars and Theologians," and "Women in Buddhism."

RLST 493 Internship in Religious Studies **var-6-12cr**

Prerequisites: Junior or senior; religious studies major or double major; 2.5 GPA in major; department approval

A supervised experience in a public or private organization that extends and complements course work in religious studies.

SAFE: Safety, Health, and Environmental Applied Sciences
Department of Safety Sciences
College of Health and Human Services
SAFE 101 Introduction to Occupational Safety and Health **3c-0l-3cr**

Introduces the evolution of the safety profession through study of historical events and the changes that resulted. Students gain an understanding of the key components of the profession, such as OSHA and workers' compensation, accident investigation, occupational health hazards, emergency response, product liability, ergonomics, fleet safety, ethics, and measuring safety program success. Case studies and small group activities prepare students for further in-depth study of these topics and to fulfill their roles as professionals.

SAFE 104 Introduction to Safety in the Natural Gas Industry **3c-0l-3cr**

An introduction to safety and health issues in the natural gas industry through the study of historical events and the changes that resulted.

Students gain an understanding of key safety and health programs for the natural gas industry, such as OSHA compliance and workers' compensation, accident investigation, occupational health hazards, emergency response, ergonomics, fleet safety, ethics, and safety program success measurement. Case studies and small group activities prepare students for further in-depth study of these topics and their roles as safety and health professionals.

SAFE 111 Principles of Safety I—General Industry 3c-0l-3cr

Stresses an understanding of the complexity of the industrial hazard control problem by thoroughly examining elements of safety and health enumerated in the OSHA-promulgated general industry standards and various consensus standards. Emphasis given to plant layout and design, powered industrial vehicles, boilers and unfired pressure vessels, working and walking surfaces, machine guarding, and an introduction to industrial processes.

SAFE 204 Principles of Safety in the Natural Gas Industry 3c-0l-3cr

Prerequisite: SAFE 104

Examines safety, health, fire, and environmental issues in the natural gas procurement process by showcasing the complexity of hazard control. Uses applicable OSHA-promulgated standards, American Petroleum Institute standards, and various consensus standards as a basis for understanding hazards and their control requirements, such as the use of personal protective equipment. Emphasis is given to well site construction, layout and equipment, and hazards associated with gas procurement construction and operations, such as fall potential, confined spaces, fire and explosion, trenching and excavation, and health hazards. Safety program implementation and interaction with enforcement agencies is also highlighted.

SAFE 211 Principles of Safety II—Construction Industry 2c-3l-3cr

Prerequisites: SAFE 101; safety, health, and environmental applied sciences majors/minors only or instructor permission

Develops an understanding of hazard recognition, evaluation, prioritization, and control of critical workplace hazards associated with construction. Students are exposed to the complexity of three-dimensional work that exists in the fast-paced construction industry by thoroughly examining elements of safety and health enumerated in the OSHA standards and in various consensus standards. An emphasis is placed on personal protective equipment, electrical safety, scaffolds, fall protection, trenches, and confined space entry including rescue. Practical application of associated hazards and their control strategies is accomplished in laboratory sessions.

SAFE 212 Hazard Prevention Management I 3c-0l-3cr

Prerequisites: SAFE 101; safety, health, and environmental applied sciences majors/minors only or instructor permission

Teaches the fundamental concepts involved in the management of safety programs. Basic safety management terminology, safety professional code of ethics, fleet safety, and product safety are discussed. Also discusses risk management and workers' compensation, as well as workplace violence.

SAFE 215 Safety, Health, and Environmental Communications 3c-0l-3cr

Prerequisites: Sophomore standing; safety, health, and environmental applied sciences majors/minors only or instructor permission

Provides students with the ability to apply the theories of learning and communication to aid them in becoming effective oral and written safety, health, and environmental communicators and trainers. Students design and deliver training programs using modern technology and charismatic engagement tools. Students learn, both in writing and orally, how to use communication skills to convince management and employees to embrace and implement safety initiatives and to communicate with regulators and the public regarding safety, environmental, and health issues. Students develop a range of written documents, such as safety, health, and environmental policies, procedures and/or programs, inspection and audit reports, and program and risk assessment and exposure reports, and then communicate summaries of these documents orally. (writing-intensive course)

SAFE 220 Hazardous Materials and Emergency Management 3c-0l-3cr

Prerequisites: CHEM 101, SAFE 101, safety, health, and environmental applied sciences majors/minors only or instructor permission

Provides a basic understanding of the storage, transportation, and use of hazardous materials in business. Includes a discussion on hazardous materials, specifically their definitions, categories, properties, regulations, and evaluation. Critical principles of emergency management, including both private and public sector elements, are included.

SAFE 310 Environmental Safety and Health Regulations and Sustainability 3c-0l-3cr

Prerequisite: CHEM 101 or instructor permission

Provides a working knowledge of federal environmental legislation and its practical application in the work environment. Environmental laws covered include the Clean Water Act; the Clean Air Act; the Resource Conservation and Recovery Act; the Comprehensive Environmental Response, Compensation, and Liability Act; and other related environmental laws. Provides an understanding of the application of sustainability concepts in the work environment.

SAFE 311 Fire Protection 3c-0l-3cr

Prerequisite: CHEM 101 or instructor permission

Teaches the fundamental concepts involved in the protection of people and property from fire and explosion. Basic fire safety terminology, fire chemistry and extinguishment, fire safety references and standards, and fire program management are discussed. Also discusses control measures for common fire and explosion hazard and the design of buildings in terms of life safety and fire suppression systems.

SAFE 330 Recognition, Evaluation, and Control of Occupational Health Hazards I 3c-3l-4cr

Prerequisites: CHEM 101; safety, health, and environmental applied sciences majors only or instructor permission

Prerequisite or Corequisite: BIOL 104 or 155

Provides an understanding of selected chemical stressors in the workplace that may present occupational health hazards to workers. Students learn to anticipate, identify, evaluate, and control chemical stressors including dusts, mists, metal fumes, airborne fibers, inorganic and organic gases and vapors, and oxygen-deficient atmospheres. Hazard classification systems, adverse health effects from excessive exposures, workplace standards, sampling and analytical methods, and control options are emphasized.

SAFE 335 Industrial and Environmental Stressors 2c-0l-2cr

Prerequisites: BIOL 104 or 155, CHEM 101

Focuses on understanding and applying safety, regulatory, toxicological, environmental, and epidemiological information, data, and models to determine occupational risk from exposure to common industrial and environmental stressors. Also covers product safety risk from consumer exposure to manufactured products. Case studies act as important means for presenting and discussing information.

SAFE 345 Process and Systems Safety 3c-0l-3cr

Prerequisites: MATH 105 and SAFE 111 or instructor permission

Focuses on the evaluation of system designs using detailed system analysis techniques. Topics include system definition, economics of systems safety, quantitative and qualitative systems safety methodology, and systems safety/process safety program administration. Skills gained include the ability to perform hardware and human factors systems analysis. Techniques include failure mode and effect analysis, hazard and operability studies, what-if and scenario building, and operating and support hazard analysis. Practical analysis work is accomplished through in-class discussion, demonstration sessions, and homework assignments.

SAFE 347 Ergonomics 2c-3l-3cr

Prerequisite: Safety, health, and environmental applied sciences majors only or instructor permission

Prerequisite or Corequisite: BIOL 104 or 155

Explores the principles that control human performance and its effect on the safety and reliability of systems. Engineering anthropometrics, human perception, biomechanics of motion and work posture, work physiology,

and human performance measurement are taught in the context of their application in workplace design. Instructs in methodologies for analysis of tasks and human performance requirements. Important human limitations and ergonomic hazard evaluations, such as lifting and repetitive motion tasks, are studied in laboratory sessions.

SAFE 361 Air and Water Pollution **2c-0l-2cr**

Prerequisite: SAFE 220 or instructor permission

Focuses on major aspects of industrial air and water pollution management. Includes sources and analysis of industrial air and water pollution, evaluation and control of air and water pollutants, and atmospheric and water chemistry. Particular emphasis is placed on information that is practical for the safety management, industrial health, or environmental health professional.

SAFE 412 Hazard Prevention Management II **2c-3l-3cr**

Prerequisite: SAFE 212

Teaches a systems-based approach to managing safety programs, hazards, and risk. An emphasis is placed on understanding proactive approaches to conducting pre-hazard and life-cycle safety analyses of activities/operations and developing safety system documentation (e.g., policies, objectives, goals, performance measures, plans, committee charters, safety procedures, work procedures, audit plans, and accident investigation reports).

SAFE 430 Recognition, Evaluation, and Control of Occupational Health Hazards II **3c-3l-4cr**

Prerequisites: BIOL 104 or 155, PHYS 111, safety, health, and environmental applied sciences majors only or instructor permission

Provides an understanding of selected physical and biological stressors in the workplace that may present occupational health hazards to workers. Students learn to anticipate, identify, evaluate, and control physical and biological stressors in the workplace. Emphasizes adverse health effects from excessive exposures, workplace standards, sampling and analytical methods, and control options. Concludes with discussions that focus on the effective development and implementation of a comprehensive safety and health program.

SAFE 435 Ethics and Professionalism **1c-0l-1cr**

Prerequisite: Senior standing

Provides a basic understanding of ethics and professionalism related to the occupational safety, health, and environmental profession. Specific topics include the ASSE Code of Ethics, ethical dilemmas that may be experienced in the workplace, expectations regarding professional behavior on internship, and professional growth. Students also learn about safety, health, and environmental professional organizations and certification bodies.

SAFE 488 Internship **12cr**

Prerequisites: Senior standing, all required safety sciences courses in major
Student conducts a practicum at an approved occupational setting. Student is required to complete four major projects that will be developed in collaboration between the faculty supervisor and the internship supervisor. Student is accountable to an on-site supervisor and required to remain in close contact with a Safety Sciences faculty coordinator.

SAFE 493 Internship **6cr**

Prerequisites: Senior standing, all required courses in major
Applies hazard assessment and management practices to actual workplace safety issues. A two-hour weekly debriefing session involves the students in developing their written and oral communication skills.

SCI: Science
College of Natural Sciences and Mathematics

SCI 101 Fundamentals of Physics **2c-2l-2.5cr**

Prerequisite: Early childhood education/special education major or instructor permission

A conceptual course in physics for the non-science major. High school physics is not a prerequisite. Class and lab presentations concentrate upon dispelling naive concepts and developing a better understanding and appreciation of the physical world. The topics of motion, heat, light, sound, electricity, magnetism, and the atom are presented in context with our ev-

eryday experiences. Does not fulfill the Liberal Studies requirement except for majors in early childhood education/special education major.

SCI 102 Fundamentals of Chemistry **2c-2l-2.5cr**

Prerequisite: Early childhood education/special education major or instructor permission

Surveys chemical principles and concepts for pre-service early childhood/special education majors. A variety of chemical concepts is presented, as well as their applications to technology and society. A series of laboratory exercises and projects will allow student to develop inquiry-based activities for the communication of scientific and chemical concepts with the goal of developing scientific literacy.

SCI 103 Fundamentals of Earth and Space Science **2c-2l-2.5cr**

Prerequisite: Early childhood education/special education major
Earth science course for early childhood education/special education (ECSP) majors. Introduces concepts and applications of astronomy, geology, oceanography, and meteorology. Includes both lecture and laboratory components with an emphasis on how the earth sciences impact the natural environment. Does not fulfill the Liberal Studies requirement except for majors in early childhood education/special education major.

SCI 104 Fundamentals of Environmental Biology **2c-2l-2.5cr**

Prerequisite: Early childhood education/special education major or instructor permission

Introduces the major concepts and principles of ecology and their application to modern living. Includes lecture and laboratory components with an emphasis on the content and processes of science. Laboratory exercises reinforce lecture topics as well as the use of laboratory equipment, measuring procedures, experimental design, and the organization, visual representation, and analysis of data.

SCI 105 Physical Science I **3c-2l-4cr**

A descriptive and conceptual course in physics for the non-science major. High school physics is not a prerequisite. Content is designed to develop an understanding and appreciation of the physical world around us, to produce changes in attitude and background essential for our modern society, and to clarify the following topics: motion, heat, sound, light, electricity, magnetism, and the structure of matter.

SCI 106 Physical Science II **3c-2l-4cr**

A basic course in environmental and consumer chemistry for the non-science major. High school chemistry is not a prerequisite. Major topics include humankind's use and abuse of soil, water, air, and energy resources, global food production and hunger, the nuclear industry, and the threat of nuclear war. Consumer topics include vitamins and nutrition, food additives, pesticides, and drugs.

SCI 107 Chemistry for Everyone **3c-0l-3cr**

A basic course in chemistry for the non-science major. High school chemistry is not a prerequisite. The students develop an understanding and appreciation of the process of science and of the significance of chemistry in everyday life. In addition to basic chemical principles, consumer topics, such as batteries, nuclear chemistry, chemistry of living systems, air, water, energy, and food additives, are covered.

SCI 117 Chemistry for Everyone Laboratory **0c-2l-1cr**

Prerequisite: Must be taken after or concurrent with SCI 107

A basic laboratory course in chemistry for the non-science major. Laboratory exercises are for the students to develop an understanding and appreciation of the process of science and of the significance of chemistry in everyday life. These laboratory exercises will demonstrate basic chemical principles and will include consumer topics, such as acids and bases, nuclear chemistry, water hardness, and food additives.

SOC: Sociology
Department of Sociology
College of Humanities and Social Sciences

SOC 151 Principles of Sociology **3c-0l-3cr**

A scientific study of the structure of human societies and the behavior of individual people and groups in society. Examines the relationship between

individuals and societal institutions, processes, and interactions. Provides an overview of the discipline, including key concepts, main theoretical perspectives, the methods and research findings of sociologists, and social inequalities. Meets Social Science requirement for Liberal Studies. SOC 151 and 161 may be substituted interchangeably for D/F repeats. SOC 151 and 161 may not be used for duplicate credit. SOC 161 is required for the Effective Teamwork and Communication minor.

SOC 161 Foundations of Sociology: Social Relations in Groups and Organizations **3c-0l-3cr**

Studies the structure of human societies and the behavior of individual people, groups, and teams in society. Examines the relationship between individuals and societal institutions, processes, and interactions with emphasis on the ways power/status are reflected. Explores the relationship between individual identity and team dynamics as it pertains to race, gender, class, sexuality, ability, and age while relating to the methods and research findings of sociologists. Applies decision-making and problem-solving as members of a small teams working to achieve a shared objective within a larger organizational context. For those seeking a minor in Effective Teamwork and Communication. Meets Social Science for Liberal Studies. SOC 151 and 161 may be substituted interchangeably for D/F repeats, but SOC 161 is required for the Effective Teamwork and Communication minor. SOC 151 and 161 may not be used for duplicate credit.

SOC 231 Contemporary Social Problems **3c-0l-3cr**

Using a sociological perspective, this course will examine pressing social problems as they relate to race, class, and gender in contemporary American society. Such problems may include various issues such as poverty, delinquency, substance abuse, crime, divorce, and others. These issues are considered through multiple lenses, including historical, economic, and social, with connections to current social policy.

SOC 251 Sociology of Human Sexuality **3c-0l-3cr**

An in-depth analysis of a formerly taboo topic, human sexuality. Current information from biological, psychological, and sociological research on human relationships is presented to provide a foundation for self-understanding and societal values.

SOC 269 Sociology of Deviance **3c-0l-3cr**

Prerequisite: SOC 151 or 161 or instructor permission

An overview of the sociological study of deviance. Begins with examining the nature and meaning of deviance or how society creates deviance as social and legal constructions and identifies specific human behaviors as types or forms of deviance. Also examines the major theories or multi-causal explanations of why such deviance occurs. Further describes how society, especially its social institutions and agents, attempts to control or suppress such deviance. Social policy implications of such societal reactions are also considered.

SOC 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

SOC 300 Skills for Using Sociology in Your Career and Community **3c-0l-3cr**

Prerequisite: SOC 151 or 231

Develops a variety of skills that sociologists bring to the workplace, including research literacy, application of theory and research, and professional writing. Explores the wide range of careers and other endeavors to which these skills may be applied. Utilizes concrete activities and practical use of knowledge and skills that will aid in future coursework, and in making valuable contributions to organizations in the public, private, and nonprofit sectors.

SOC 314 Sociology of Native Americans **3c-0l-3cr**

An introduction to the history, "traditional" cultures, and changes brought by European settlement and American conquest and the range of social issues faced by contemporary Native Americans on and off reservations. A

special emphasis is placed on the efforts of indigenous Indian societies to maintain and regain access to land and other resources. Activist responses are considered along with the social consequences of past and present initiatives and policies.

SOC 320 Sociological Theory **3c-0l-3cr**

Prerequisites: SOC 151 or 161; second-semester sophomore standing

A detailed survey of the historical development of sociological theory from the mid-19th century to the present. Treats the classical theorists Marx, Durkheim, and Weber and such contemporary theoretical schools as functionalism, Marxian, and Weberian conflict theory, cultural materialism, social evolutionism, rational choice theory, symbolic interaction, ethnomethodology, sociobiology, structuralism, and postmodernism. Students are encouraged to take this course in the second semester of their sophomore year or during their junior year.

SOC 333 Delinquency and Youth **3c-0l-3cr**

Prerequisite: SOC 151 or 161

A study of social and cultural factors involved in various youth lifestyles, including delinquency. Cross-cultural and historical approach used in a review of social norms, social control, and socialization institutions and community-based programs for rehabilitation.

SOC 335 Alcohol and Drug Abuse **3c-0l-3cr**

Prerequisite: SOC 151

Examines the social issues and problems of alcohol and drug misuse in American society. Legal and illegal substances are considered, and the causes of substance abuse as well as alternatives are examined.

SOC 336 Sociology of the Family **3c-0l-3cr**

Prerequisite: SOC 151 or 161

A study of family dynamics and patterns using sociological research methods and theories. Examines social, cultural, and historical changes that have altered the nature of family life and created challenges for public policy. Addresses contemporary problems and issues encountered by families and approaches to dealing with these problems.

SOC 337 Society, Globalization, and Risk **3c-0l-3cr**

Prerequisite: One of the following: ANTH 110, ECON 101, 121, GEOG 230, HIST 202, PLSC 101, 282, SOC 151, 161

Examines the factors driving globalization, and the risks associated with globalization, on both a local and international level. Foundations for thinking in global terms are provided through an overview of historical developments and major international actors that have shaped current global society. Focuses on major challenges and risks facing global society. Throughout, students are encouraged to connect their own personal life experiences to the broader global context. (Titled World Societies and World Systems before 2014-15.)

SOC 341 Sociology of Education **3c-0l-3cr**

Prerequisite: SOC 151 or 161

Examines the place of education in society. Special attention is given to the development of education in America and its relation to political and economic phenomena. Some attention is given to education in other industrial and agrarian societies.

SOC 345 Interpersonal Dynamics **3c-0l-3cr**

Prerequisite: SOC 151 or 161

A study of the interaction between and among individuals and groups in various social settings. Emphasizes self-understanding, small groups, socialization, social influence and compliance, person perception, collective behavior, and mass communication.

SOC 348 Sociology of Work **3c-0l-3cr**

Prerequisite: SOC 151 or 161

Focuses upon the sociological examination of the various forms of labor, employment, and unemployment present in industrial societies. Examines the nature of work and unemployment in the modern era and how these forms are being transformed in the present period.

SOC 352 Sociology of Religion 3c-01-3cr Prerequisite: SOC 151 or 161 Nature, role, and function of religious phenomena in human societies are explored with special attention to certain critical issues as they relate to religion and politics and religion and economics. Examines some fundamental modes of religious life, including ritual forms and mythic expressions. Includes other themes such as revitalization movements and processes of secularization in modern societies.	SOC 417 Global Service Learning 3c-01-3cr Prerequisites: SOC 151 or 161 or instructor permission A forum for critical reflection on community-driven service, cross-cultural experiences, and global citizenship. Progresses through a framework, which explicitly links personal experience and readings with regular writing assignments in a journal and class discussion. Reflects on both the purposes of their service work as well as on its limits as a response to specific needs within the community, and more general problems of social justice. Through the experience of interaction and reflection, students learn to apply knowledge and skills in the real world, exercise critical thinking, develop self-learning and helping skills, develop societal knowledge and sensitivity, and enhance personal development. Explores issues of social responsibility and citizenship in relation to the social problems with which they become acquainted through their community work.
SOC 357 Sociology of Aging and the Life-course 3c-01-3cr Prerequisite: SOC 151 or 161 An introduction to the various problems faced in the process of growing older including ageism, social support, elder abuse, financial exploitation, etc. Attitudes of society toward the elderly and the social and cultural impact of an aging US population are examined	SOC 421 Sociology of Mass Media 3c-01-3cr Prerequisite: SOC 151 or 161 Examines the development of mass media as dominant cultural forms within advanced industrial societies in the 21st century. Emphasizes critical understanding of the sociohistorical development, the underlying assumptions, and the social implications of the advance of mass media.
SOC 361 Social Stratification 3c-01-3cr Prerequisite: SOC 151 or 161 Examines leading perspectives in the major sociological subfield of social stratification. Attention drawn to different ways of ranking people in human societies, issues concerning the distribution of income and wealth, the role of political power in determining who gets what, and the causes and consequences of social inequality for specific groups.	SOC 427 Social Perspectives on Intimate Partner Violence 3c-01-3cr Prerequisite: SOC 151 or 161 Considers the range of theoretical explanations from a social perspective for the pervasive violence between intimate partners. Particularly examines the research on intimate partner violence and the implications of this research for programs and policies assisting both the victim and the abuser.
SOC 362 Racial and Ethnic Minorities 3c-01-3cr Prerequisite: SOC 151 or 161 Examines from a historical and comparative perspective the experiences of minority groups, with special emphasis on economic and political domination, stereotyping, prejudice, and discrimination. Techniques of majority group domination and the responses of minority groups are discussed. Various reasons for the different rates and patterns of assimilation are explored.	SOC 428 Child Abuse 3c-01-3cr Prerequisite: SOC 151 or 161 Examines the prevalence, causes, and social implications of physical, sexual, emotional, and neglect forms of child abuse in society. Child abuse is studied from the individual, family, and societal-level perspectives. Potential intervention strategies will also be considered.
SOC 363 Sociology of Gender 3c-01-3cr Prerequisite: SOC 151 or 161 Explores current perspectives on the situations faced by women and men primarily in the United States. Examines issues such as the impact of sex and gender on socialization, the construction of knowledge, intimate relationships, paid work, family relationships, health, and issues of change.	SOC 442 Medical Sociology 3c-01-3cr Prerequisite: SOC 151 or 161 A review of medical sociology. Focuses on the sociological examination of health, illness, and healing; health inequalities; medicalization; medicine as a profession; healing occupations; interactions within medical settings; the social organization of health services; and bioethics. Examines current, major issues in public policy and healing. (Offered as SOC 342 prior to 2015-16.)
SOC 387 Social and Cultural Change 3c-01-3cr Prerequisite: SOC 151 or 161 An exploration of current theoretical perspectives on social and cultural change. Special attention given to planned change at the local or regional level.	SOC 448 Social Welfare Policy 3c-01-3cr Prerequisite: SOC 151 or 161 Focuses on the formation of social welfare programs in the United States, current social policy issues, and debates between conservative, liberal, and social democratic policy analysts. Special attention drawn to various social problems and a range of social policies designed to ameliorate the economic disadvantages of single individuals, single parents, and two-parent families. Also devoted to understanding the relationship between social policy, research, and implementation.
SOC 391 Foundations of Sociological Practice 3c-01-3cr Prerequisite: SOC 151 or 161 Develops an understanding of how to use micro and macro sociological theory to analyze, assess, and diagnose human problems. Employing case studies, prepares students to do casework and to help solve interpersonal, group, and organizational problems. Also seeks to acquaint students with the broader professional activity of human services. Recommended prerequisite/corequisite SOC 320.	SOC 450 Health Disparities 3c-01-3cr Prerequisite: SOC 151 or ANTH 211 or instructor permission Explores health status and healthcare disparities across groups based on race/ethnicity, gender, socioeconomic status/social class, nativity, refugee and citizen status, and other cultural and demographic characteristics. Uses a social determinants of health perspective to consider how social, cultural, environmental, political, and economic conditions produce unequal and inequitable health outcomes, with special focus on disadvantaged populations. Addresses agency and empowerment of populations seeking and accessing health and healthcare. Includes different levels of public health interventions that can improve health outcomes, better calibrate access to healthcare, and improve health equity within populations. (Also offered as ANTH 450; may not be taken for duplicate credit.)
SOC 392 Clinical Sociological Practice 3c-01-3cr Prerequisite: SOC 391 Prepares the student to effect constructive change within individuals, groups, families, and communities. Draws its analysis, diagnosis, and methods from the foundations of sociological theory at the level of intervention with clients. It is strongly recommended that students have at least 6 SOC credits in their specialized area before taking SOC 392 other than SOC 151, 320, 460, and 461.	
SOC 410 Men and Masculinities 3c-01-3cr Prerequisite: SOC 151 or 161 or instructor permission Explores constructs of masculinity within the context of US culture using a sociological lens. Examines the notion that there are multiple masculinities that intersect with a range of areas including race, ethnicity, class, sexuality, and gender identity. Evaluates the influence of social contexts and roles on behavioral expectations for men and boys. Analyzes implications for society and individual men.	

SOC 452 Disability and Society **3c-0l-3cr****Prerequisite:** SOC 151 or 161

Analyzes disability from a sociological perspective. Includes consideration of historical and current views of disability and a review of related concepts from the fields of medical sociology and the sociology of deviance. Also includes an analysis of the effects of disabilities on individuals and families through the life course and a consideration of related ethical, economic, political, and social policy issues. Emphasizes disability as a social construction.

SOC 456 Field Research Methods **3c-0l-3cr****Prerequisite:** SOC 460 or permission

An examination of methods and practice of sociology and anthropology in the areas of qualitative and field methods. Concentrates upon the development of field notes, interviewing techniques, participant observation, etc. Qualitative methods of sampling and analysis includes theoretical sampling and analytic induction. Brief background research into community, organizational, and group structure will also be emphasized.

SOC 458 Political Sociology **3c-0l-3cr****Prerequisite:** SOC 151 or 161

An examination of the social context of power and politics, with special reference to such topics as who controls the state and state policy; the role of the state in stabilizing capitalism and protecting the power of the upper class; political activities of the middle and upper classes; and labor, civil rights, and welfare rights social movements in America. Especially considers the problems of conducting and implementing social policy research for social change. Cross-listed as PLSC 346.

SOC 460 Social Research Methods I **3c-0l-3cr****Prerequisites:** SOC 320, junior standing

First in a two-course methods sequence. Examines diverse research designs used in the social sciences, i.e., survey, field study, experiment, documentary, and existing statistical data. Focuses both on logic and practice of social research. Student develops a research design to be implemented in the second course in the research sequence.

SOC 461 Social Research Methods II **3c-0l-3cr****Prerequisites:** SOC 460, junior standing

Second in a two-course methods sequence. Student implements the research project developed during the first course in this sequence. Primarily applied research, and students use the semester to collect and analyze their data and to prepare a final research report on their findings.

SOC 481 Special Topics **var-1-3cr****Prerequisite:** As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are offered primarily for upper-level undergraduate students.

SOC 482 Independent Study **var-1-3cr****Prerequisites:** Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An opportunity to engage in an in-depth analysis of some topic through consultation with a faculty member. A semester project ordinarily expected. Approval is based on academic appropriateness and availability of resources.

SOC 483 Honors Thesis **var-1-6cr****Prerequisites:** Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

SOC 493 Internship in Sociology **var-3-12cr****Prerequisites:** Prerequisites vary by track. Permission of internship coordinator required. GPA within SOC of 2.5 or better.**Human Services Track Prerequisites:** Grade of "C" or better in SOC 151 or 161, 320, 391, 392, and 6cr within substantive area**General Sociology Track Prerequisites:** Grade of "C" or better in SOC 151 or 161, 320, 361 or 362 or 363, and 9cr (6cr within substantive area). Students who wish to intern in a human services agency must take SOC 391 and 392.**Applied Social Research Track Prerequisites:** Grade of "C" or better in SOC 151 or 161, 320, 460, 461, and 6cr within substantive area**Sociology of Disability Services Track Prerequisites:** Grade of "C" or better in SOC 151 or 161, 320, 391, 392, 452, EDEX 111

A supervised experience in a public or private organization that extends and complements course work at the university.

SOWK: Social Work
Department of Sociology
College of Humanities and Social Sciences

SOWK 238 Introduction to Social Work **3c-0l-3cr****Prerequisite:** ANTH 110 or SOC 151 or 161

An introduction to the dynamics of helping relationships.

SPAN: Spanish
Department of Foreign Languages
College of Humanities and Social Sciences

SPAN 101 Elementary Spanish I **4c-0l-4cr**

For beginning students. The primary emphasis is on aural/oral skills.

Students learn to converse and ask questions in simple present time and become acquainted with location of Hispanic populations and elements of their daily lives. Attendance is required. May not register for or take a D/F repeat in SPAN 101 when credit has already been received for a higher-numbered Spanish course.

SPAN 102 Elementary Spanish II **4c-0l-4cr****Prerequisite:** SPAN 101, or the equivalent as established by departmental placement examination

A continuation of SPAN 101. Students learn to express past and future time and continue to learn about Hispanic countries and their cultures. Liberal Studies credit is given. Attendance is required. May not register for or take a D/F repeat in SPAN 102 when credit has already been received for a higher-numbered course.

SPAN 201 Intermediate Spanish **4c-0l-4cr****Prerequisite:** SPAN 102, or the equivalent as established by departmental placement examination

A continuation of previous work on listening, speaking, reading, and writing skills. Students learn to function in everyday situations, expressing opinions and doubts, and narrating and describing in present, past, and future time. Exposure to cultural concepts through literary readings. Liberal Studies credit is given. Attendance is required. No student is allowed to register for or take a D/F repeat in SPAN 201 when credit has already been received for a higher numbered Spanish course.

SPAN 220 Intermediate Spanish Conversation **3c-0l-3cr****Prerequisite:** SPAN 201 or equivalent

Intensive work on oral communication skills with emphasis on spontaneous interpersonal speaking, discourse strategies, vocabulary building, and pronunciation. Liberal Studies credit is given. Required for all majors and minors. No student is allowed to register for or take a D/F repeat in SPAN 220 when credit has already been received for a higher number Spanish course.

SPAN 230 Intermediate Spanish Composition and Grammar **3c-0l-3cr****Prerequisite:** SPAN 220 or equivalent; may be taken concurrently

Intensive practice in written expression and communication in Spanish together with a grammar review. Taught in Spanish. Required for all majors

and minors. Meets Liberal Studies requirement for a writing-intensive course for majors.

SPAN 244 Modern Mexico **3c-0I-3cr**

Prerequisites: SPAN 201 or equivalent and participation in the Mexico Summer Study Abroad Program

Taught in Mexico as part of the IUP Mexico study abroad program; introduces the contemporary culture of Mexico. Provides a cultural perspective within which to understand current phenomena. Exposes students to readings on cultural and historical topics, current events, and folkloric narratives. Complements firsthand experience gained through field trips and through living with a Mexican family. Course is taught in Spanish on-site in Mexico and online.

SPAN 260 Introduction to Hispanic Literature **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

A prerequisite for any 300- or 400-level course in Hispanic literatures. Provides the tools necessary for developing literary competence and combines a study of literary genres and analysis with an introduction to the literatures of Spain and Spanish America. Taught in Spanish.

SPAN 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

SPAN 330 Advanced Spanish Composition and Grammar **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

Extensive work on the development of written expression and communication at the "advanced level" of proficiency in Spanish, as defined by the American Council on the Teaching of Foreign Languages, together with the study of advanced-level structures. Taught in Spanish.

SPAN 340 Hispanic Cultures into the 19th Century **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

An introduction to the significant aspects of the cultures of both Spain and Spanish America. Elements for explanation and discussion are drawn from artistic, literary, religious, geographic, social, and political manifestations of Hispanic cultures as they have revealed themselves through the early 19th century. Taught in Spanish. (Titled Hispanic Civilization through the 19th Century before 2016-17.)

SPAN 342 Spanish Cultures from the 19th Century to the Present **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

Analyzes the major cultural trends in 19th-, 20th-, and 21st-century Spain as they relate to its current problems, aspirations, and values. Draws elements for explanation and discussion from artistic, literary, religious, geographic, social, and political manifestations. Taught in Spanish; offered alternate years. (May not duplicate credit for SPAN 382 taken in Valladolid.) (Titled 20th-Century Spanish Civilization and Culture before 2016-17.)

SPAN 344 Spanish-American Cultures from the 19th Century to the Present **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

Analyzes the major cultural trends in Spanish America as they relate to its position in the world, starting with the independence movements of the early nineteenth century, through the 20th century to the present. Draws elements for explanation and discussion from social, political, artistic, literary, religious, and geographic manifestations, including indigenous and African cultural influences. Taught in Spanish; offered alternate years. (Titled 20th-Century Spanish-American Civilization and Culture before 2016-17.)

SPAN 350 Advanced Spanish Conversation **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent. May earn credit for SPAN 350 before taking SPAN 230 only by completion of a minimum six-week study abroad program and successful prior completion of SPAN 220, 222, or 223 (or the equivalent).

Extensive practice in oral communication skills. Emphasizes development of fluency in speaking over a wide range of topic areas. Required for all majors and minors.

SPAN 354 Commercial Spanish **3c-0I-3cr**

Prerequisite: SPAN 230 or equivalent

Especially for majors in Spanish for international trade. Has three focuses: teaches how to do business communications in Spanish; teaches the vocabulary necessary for dealing with all aspects of trade and commerce; and introduces the special concerns and practices of business in the Spanish-speaking world. Taught in Spanish.

SPAN 362 Survey of Peninsular Literature **3c-0I-3cr**

Prerequisite: SPAN 260 or permission

Introduces a careful and critical reading of literary texts from Spain, read either in their entirety or in select passages. Taught in Spanish; offered alternate years.

SPAN 364 Survey of Spanish-American Literature **3c-0I-3cr**

Prerequisite: SPAN 260 or permission

Introduces a careful and critical reading of Spanish-American literary texts, read either in their entirety or in select passages. Taught in Spanish; offered alternate years.

SPAN 382-389 Pennsylvania-Valladolid Program **18cr**

Prerequisites: SPAN 230 and 260 or permission

Contact chairperson, Department of Foreign Languages. Courses taken in Valladolid include SPAN 382-389 and SPAN 482 (3cr). Descriptions follow.

SPAN 382 Contemporary Spain **3c-0I-3cr**

Prerequisites: SPAN 230 and 260 or permission

Gives a general view of Spain today in the areas of society, economy, and political institutions. (See SPAN 342)

SPAN 383 Geography and History of Spain **3c-0I-3cr**

Prerequisites: SPAN 230 and 260 or permission

Introduces a panorama of Spanish physical, social, and economic geography, including the recent autonomic division of the country and the communication among the autonomies. Also reviews the history of Spain from the 15th century to the present with special emphasis on today's Spanish institutions.

SPAN 384 History of Spanish Art **3c-0I-3cr**

Prerequisites: SPAN 230 and 260 or permission

Exposure to the richness of art in the Iberian Peninsula and in particular in the area of Madrid and Castilla-Leon. Studies the evolution of Spanish art in history, giving more emphasis to contemporary tendencies.

SPAN 385 Survey of Spanish Literature **3c-0I-3cr**

Prerequisites: SPAN 230 and 260 or permission

Introduces a general study of Spanish literature from its origin to the present time; students learn to appreciate and analyze the different literary genres. An emphasis on 20th-century literature.

SPAN 389 Theory and Practice of Spanish Language **3c-0I-3cr**

Prerequisites: SPAN 230 and 260 or permission

Introduces Spanish syntax, morphology, and the Spanish language lexicon, as well as familiar and formal conversation and idiomatic expressions used in everyday situations.

SPAN 390 Teaching of Elementary Content through the Spanish Language **3c-0I-3cr**

Prerequisites: Passage of a language proficiency examination and instructor permission

Studies current theories of language acquisition processes in children and develops foreign language instructional objectives and activities that integrate language and cultural learning with the content areas of the

elementary school curriculum. Through hands-on practice, students develop techniques for teaching functional language, planning lessons, testing language skills, setting curricular objectives, and selecting/designing materials appropriate to the needs and interests of elementary school foreign language learners.

SPAN 402 Translation and Interpretation 3c-0l-3cr

Prerequisites: SPAN 230, 350

Fundamental translation skills for use in business and industry as well as in academic and popular fields.

SPAN 404 Advanced Spanish Grammar 3c-0l-3cr

Prerequisites: SPAN 230, senior standing or department permission

An in-depth study of Spanish syntax and morphology. Taught in Spanish.

SPAN 410 Medieval Literature 3c-0l-3cr

Prerequisite: SPAN 260 or permission

Reading and discussion of various medieval genres: brief prose narrative, epic, lyric, and didactic poetry, prose, and medieval drama. Taught in Spanish.

SPAN 411 Golden Age Spanish 3c-0l-3cr

Prerequisite: SPAN 260 or permission

An analysis of themes, motifs, and stylistic devices of Spanish poetry, novel, and theater of the Renaissance and Baroque. Taught in Spanish.

SPAN 412 The Spanish Novel of the 19th and 20th Centuries 3c-0l-3cr

Prerequisite: SPAN 260 or permission

An analysis of selected novels from three major periods: the 19th century, the Generation of 1898, and the post-Civil War. Taught in Spanish.

SPAN 413 Spanish Poetry of the 19th and 20th Centuries 3c-0l-3cr

Prerequisite: SPAN 260 or permission

The study and analysis of lyric poetry in Spain from 19th-century poetry through modernism and its evolution to the present. Taught in Spanish.

SPAN 420 Modern Hispanic Theater 3c-0l-3cr

Prerequisite: SPAN 260 or permission

The study and analysis of modern dramatic works from Spain and Spanish America. Particular emphasis is given to the representational aspect of the works. Taught in Spanish.

SPAN 421 Modern Hispanic Short Story 3c-0l-3cr

Prerequisite: SPAN 260 or permission

The critical analysis of short stories by Spanish and Spanish-American authors. Taught in Spanish; offered in four-year rotation.

SPAN 430 20th-Century Spanish-American Prose 3c-0l-3cr

Prerequisite: SPAN 260 or permission

Traces literary expressions from the turn of the century to the present in the major prose expressions of the essay, the short story, and the novel. Taught in Spanish; offered in four-year rotation.

SPAN 431 Spanish-American Poetry 3c-0l-3cr

Prerequisite: SPAN 260 or permission

A study of Spanish-American poetry from its early manifestations through modernism, post-modernism, and avant-garde. Taught in Spanish.

SPAN 450 Conversation Forum 3c-0l-3cr

Prerequisite: SPAN 350 or equivalent

Extensive work on the development of speaking skills at the "Advanced" level of oral proficiency, as defined in the Speaking Guidelines developed by the American Council on the Teaching of Foreign Languages. Focuses on paragraph-length discourse and narration and description in present, past, and future time frames within a variety of topics and contexts.

SPAN 453 Spanish Phonetics and Phonemics 3c-0l-3cr

Prerequisite: SPAN 230

An introduction to the study of the phonological system of Spanish and emphasis on improving pronunciation. Includes a theoretical basis for understanding the Spanish sound system, pronunciation practice and recordings,

study of Spanish dialects, and linguistic analyses. Taught in Spanish. Required for Spanish education K-12 majors; highly suggested for Spanish majors.

SPAN 481 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

SPAN 482 Independent Study var-1-6cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An opportunity to engage in an in-depth analysis of some topic dealing with the Spanish language and culture through consultation with a faculty member. Approval is based on academic appropriateness and availability of resources.

SPAN 483 Honors Thesis var-1-6cr

Prerequisites: Admission to departmental honors program; prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

An intensive, focused study involving independent research culminating in a written thesis approved by a thesis director and two faculty readers/committee members. May be taken more than once to a maximum of 6cr.

SPAN 493 Internship var-3-12cr

Prerequisite: One semester of study in a Spanish-speaking country

A supervised field experience in any Spanish-speaking area of the world with approved public agencies and institutions or private firms, no longer than one semester and no less than one month. Positions are matched as closely as possible with the intern's personal interests and professional goals. For more information contact the Spanish Department. Maximum of 6cr can be applied toward a major.

**SPLP: Speech Pathology and Audiology
Department of Communication Disorders, Special
Education, and Disability Services
College of Education and Communications**

SPLP 111 Introduction to Communication Disorders 3c-0l-3cr

Prerequisite: Major in speech-language pathology and audiology or minor in audiology

An introduction to study of physiological, acoustical, and scientific processes involved in production and reception of speech. The genetic development of speech sounds and factors that hinder or facilitate speech and language acquisition.

SPLP 122 Clinical Phonology 3c-0l-3cr

Prerequisite: Speech-language pathology and audiology major

Detailed study of the classification of American-English phonemes using the physical and acoustical perspectives. Development of proficiency in use of International Phonetic Alphabet for allophonic transcriptions of normal and disordered speech.

SPLP 222 Introduction to Audiology 3c-0l-3cr

Prerequisite: Speech-language pathology and audiology major or audiology minor

The study of auditory function, anatomy, and physiology of the auditory mechanism, psychophysics of sound, types and causes of hearing loss, measurement of hearing, and educational considerations for children with hearing loss.

SPLP 242 Speech Science I: Theory and Measurement 3c-0l-3cr

Prerequisite: Speech-language pathology and audiology major

Corequisite: SPLP 251

An introduction to the theoretic properties, biological characteristics, and physical analysis of human speech production, speech perception, and swallowing. Content is integrated into applications of clinical instrumentation and measurement.

SPLP 251 Anatomy and Physiology of Speech and Swallowing 3c-0l-3cr

Prerequisite: Speech-language pathology and audiology major
Corequisite: SPLP 242

Examines the structure and function of the body systems involved in speech production (i.e., respiration, phonation, articulation) and swallowing and an introduction to the nervous system. Normal variances based on age, gender, and race are included. Comparisons between normal and disordered clinical presentations are introduced.

SPLP 254 Classroom Management of Language Disorders 3c-0l-3cr

A study of aspects of speech, language, and hearing problems pertaining to classroom situation. Types of speech and hearing disorders; conducting speech and language improvement lessons; classroom aids for teaching the child with language, speech, and hearing impairment; and school and community resources for these children. (Required for majors in special education and suggested for majors in elementary education.)

SPLP 275 Language Science 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major, SPLP 111
Addresses the structure of language and the cognitive processes underlying normal language behavior. Applications to various clinical populations are also addressed. Prerequisites include an introductory course in communication disorders.

SPLP 281 Special Topics var-1-3cr

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

SPLP 310 Observation in Communication Disorders I 1c-0l-1cr

Prerequisites: Speech-language pathology and audiology majors with junior standing

Provides a context for observation of individuals of all ages receiving speech-language pathology or audiology services. Principles of observation, as well as assessment, prevention, and intervention are discussed.

SPLP 311 Aural Rehabilitation 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major with junior standing, or audiology minor

An examination of the effects of hearing loss at different stages of development and the technology and rehabilitative procedures used with hard-of-hearing and deaf children and adults.

SPLP 312 Advanced Audiology and Hearing Disorders 3c-0l-3cr

Prerequisite: SPLP 222

Contains advanced audiological topics concerning auditory function; types and causes of hearing disorders; advanced evaluation procedures and techniques for hearing; and social, emotional, and educational impacts of various auditory disorders on adults and children.

SPLP 334 Language Development 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major, junior standing

The study of development of an interpersonal communication system; language as a system of symbols for communication; the structure of the English language, including phonology, syntax, semantics. Highlighting of neurological, social, and psychological bases of language development.

SPLP 342 Neuroscience for Communication Disorders 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major, junior standing

An overview of the basic anatomy of the central nervous system and its control of human swallowing and communication. Includes the biological science principles of speech and language processing and neurogenic communication and swallowing disorders in children and adults. (Titled Speech Science II Neuroscience before 2016-17.)

SPLP 401 Communication and Social Competence for Children with Autism 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major with junior standing, or instructor permission

Examines the interplay among cognition, language, and communication in children and adolescents with autism spectrum disorders (ASD). A team approach is emphasized outlining the roles of parents, speech-language pathologists, special education teachers, classroom teachers, school psychologists, and school administration. Methods for assessment of and intervention for language and social communication skills are introduced. Clinical methods that can facilitate social skills, play, and friendships with peers are emphasized.

SPLP 406 Clinical Management of Articulation and Language 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major, junior standing, SPLP 334

An introduction to the principles and practices for assessment and intervention of articulation/phonology and language disorders using a variety of experiences that allow students to practice applying their clinical skills to practical situations. An overview of diagnostic tools, assessment principles and techniques, and intervention principles and techniques as related to a variety of articulation/phonology and language disorders.

SPLP 408 Organic Disorders 3c-0l-3cr

Prerequisites: Speech-language pathology and audiology major, junior standing

Introduces the theoretic foundations, clinical characteristics, diagnostic procedures, and treatment options for three subspecialties in speech-language pathology: stuttering, voice disorders, and dysphagia.

SPLP 410 Observation in Communication Disorders II 1c-0l-1cr

Prerequisite: SPLP 310

A focused observation of patients receiving speech-language pathology or audiology services. Discusses professional codes of ethics, principles of observation, assessment, prevention, and intervention. Provides supervised services to one patient in the IUP Speech, Language, and Hearing Clinic.

SPLP 412 Organization and Administration of Speech, Language, and Hearing Programs 3c-0l-3cr

Prerequisites: SPLP 111; Junior status (60 or more credits), 3.25 GPA

Establishment and maintenance of speech and hearing programs within various administrative organizations, particularly in the public schools and health care settings. Techniques of client identification, scheduling, record-keeping, appropriate referral, material and equipment selection, counseling, and the development of coordinated professional and interdisciplinary procedures are covered. Emphasis is given to issues of ethical practice and cultural diversity.

SPLP 420 Undergraduate Clinic 1c-0l-1cr

Prerequisites: Junior standing, program director's permission

An experience in working with individuals or groups of persons who exhibit speech, language, or hearing problems. Treatment planning, documentation, and service delivery.

SPLP 422 Central Auditory Processing Disorders in the Educational Setting 3c-0l-3cr

Prerequisite: SPLP 222

Includes three sections: (1) introductory information about central auditory processing disorders (CAPD), (2) screening instruments and test batteries used by audiologists and speech-language pathologists, and (3) management and remediation options used by professionals, parents, and children with the diagnosis. The introductory information covers the characteristics, causes, comorbid conditions, influences on, and prevalence of CAPD. The various models and profiles of auditory processing disorders are presented. The personnel responsible for a multidisciplinary approach to assessing and treating CAPD are discussed. Terminology used by audiologists and SLPs is presented, as well as anatomical and physiological aspects of central auditory processing. Covers samplings of test materials commonly used in clinics, and (if time allows) students get hands-on practice administering screenings and diagnostic tests. The final third of the class focuses on

environmental modifications, remediation activities, and compensatory strategies used by therapists for CAPD diagnoses.

SPLP 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

SUST: Sustainability Studies
Colleges of Humanities and Social Sciences and Natural Sciences and Mathematics

SUST 201 Introduction to Sustainability Studies **3c-01-3cr**

Keystone course for students pursuing a minor in Sustainability Studies. To live sustainably is to aspire for balance with the environment in a society that seeks equality, justice, and the well-being of all species. Considers definitions of sustainability and introduces the principles, histories and practices of sustainability through a critical combination of interdisciplinary, global, and multicultural perspectives. Enables grappling with major, interdependent social, economic, cultural, and environmental contexts and issues related to sustainability. Engages in a praxis-based problem-solving research project, which addresses a core set of current sustainability issues emerging in local, regional, national, and global contexts.

SUST 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

SUST 481 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

THTR: Theater
Department of Theater and Dance
College of Fine Arts

THTR 101 Introduction to Theater **3c-01-3cr**

An exploration of the theater arts, examining its major conceptual and aesthetic underpinnings, major periods of theater history, selected works of dramatic literature, and the primary theater arts of acting, directing, design, and technical theater. Class experience includes the analysis of at least two major works of drama, attending two live productions, and viewing of selected televised plays and musicals. Meets Fine Arts requirement for Liberal Studies. THTR 101 and 161 may be substituted interchangeably for D/F repeats. THTR 101 and 161 may not be used for duplicate credit. THTR 161 is required for the Effective Teamwork and Communication minor.

THTR 111 Foundations of Theater **3c-01-3cr**

A primary course for those engaged in theater and any other performance-related area so as to define the nature of theater art, develop one's own individual system of analysis, and finally acquire an understanding of process, dramatic structure, composition, genre, theatrical styles, and a theory of performance.

THTR 116 Fundamentals of Theatrical Design **3c-01-3cr**

Introduces the fundamentals of scene, costume, lighting, and sound design for theater and dance. Focuses on creative processes used by designers to make choices. Topics include script analysis, director and designer communication, and the integration of the design elements into a unified production.

THTR 120 Stagecraft **3c-01-3cr**

An exploration of the material, methods, and procedures utilized in creating a scenic environment. Through instruction and practical applications, students learn the basis of scenic construction and develop competency with the basic materials and equipment used in a theatrical scenery shop.

THTR 122 Costume Workshop **3c-01-3cr**

Instruction and practical experience in the process of building costumes for the stage. Activities include fitting, cutting, sewing, dyeing, and painting. Also gives instruction in the maintenance of wardrobe, costume stock, materials, and properties.

THTR 130 Stage Voice **3c-01-3cr**

Prerequisite: Theater majors only or instructor permission

Instruction in basic development of the vocal instrument of the actor in stage performance. Emphasizes resonance, quality, pitch, and projection of the voice while improving the student's ability to articulate.

THTR 131 Stage Movement **3c-01-3cr**

Instruction in basic stage movement and the physicalization of character. Includes work in character development through variety in movement, introductory work in juggling, stage combat, and mime, and the assessment, awareness, and correction of individual movement problems.

THTR 132 Introduction to Acting **3c-01-3cr**

Introduces the art and craft of the theater from the actor's point of view. Through practical application, students develop personal and professional skills that enhance oral communication, self-presentation, and self-confidence. Students also develop the ability to respond knowledgeably to theatrical productions as an audience member.

THTR 140 Foundations of Performance **3c-01-3cr**

An intensive, experiential workshop that introduces and explores fundamental components of theatrical performance (vocal, physical, ensemble, imaginative, analytic) in a holistic sequence of exercises and projects. Provides incoming theater majors with a common set of foundational theater skills and knowledge, a theatrical vocabulary, and collaborative ensemble interaction that enriches the freshman experience. As students progress, whether on a performance track or in other areas, this course gives them a shared context from which to grow as theater artists.

THTR 161 Introduction to Theater: Interpersonal Practices **3c-01-3cr**

Explores the theater arts, examines its major conceptual and aesthetic underpinnings, major periods of theater history, selected works of dramatic literature, and the primary theater arts of acting, directing, design, and technical theater. Class experience includes the analysis of at least two major works of drama, attending two live productions, and viewing of selected televised plays and musicals. Analyzes examples of interpersonal relations of teams using dramatic literature, and implement primary acting and directing tools in discovering solutions to challenges in interpersonal relations. Designed for those seeking a minor in Effective Teamwork and Communication. Meets Fine Arts for Liberal Studies. THTR 101 and 161 may be substituted interchangeably for D/F repeats, but THTR 161 is required for the Effective Teamwork and Communication minor. THTR 101 and THTR 161 may not be used for duplicate credit.

THTR 211 History and Literature: Classical **3c-01-3cr**

A lecture course that surveys Western theater from its origins through the ancient Greeks to medieval times. Students examine styles and genres of the period through the work of playwrights, actors, and theorists. Includes the study of cultural, social, political, and economic contexts of Western theater in this period; contextual comparisons to Eastern theater of the same era; as well as the changes in performance practice, the architecture of performance space, theater technology, and audience composition.

THTR 212 History and Literature: Renaissance **3c-01-3cr**

Surveys Western theater from the Renaissance to the Industrial Revolution. Examines styles and genres of the period through the work of playwrights, directors, actors, designers, and theorists. Includes the study of cultural, social, political, and economic contexts of Western theater in this period, as

well as the changes in performance practice, the architecture of performance space, theater technology, and audience composition.

THTR 213 History and Literature: Modern and Contemporary **3c-0l-3cr**

Surveys Western theater from the late 19th century to the present. Examines styles and genres of the period through the work of playwrights, directors, actors, designers, and theorists. Includes the study of cultural, social, political, and economic contexts of Western theater in this period, as well as the changes in performance practice, the architecture of performance space, theater technology, and audience composition.

THTR 221 Basic Stage Lighting **3c-0l-3cr**

An introduction to lighting instruments, color media, control boards, physical laws of electricity and optics, graphics, and conventional techniques used in lighting theatrical productions.

THTR 223 Makeup for the Stage **3c-0l-3cr**

Deals with practical application of straight and character makeup and may include instruction in creating beards, wigs, prosthetics, and masks.

THTR 225 Theater Graphics **1c-3l-3cr**

A practical introduction to hand drawing, drafting, and graphic technology applied to theater design, technology, and stage management.

THTR 226 Stage Management **3c-0l-3cr**

Prerequisite: THTR 111 or instructor permission

A practical survey of stage management as it pertains to theater, dance, and opera productions. Covers the role of the stage manager from pre-production to post-production as well as the techniques, communication methodology, practices, and standard theater terminology.

THTR 231 Improvisation and Creativity **3c-0l-3cr**

Prerequisite: THTR 140 or instructor permission

Introduces short- and long-form improvisation techniques and scene practice. Explores an overview of improvisatory styles and practitioners. Analyzes how social mores, world events, and prevailing attitudes shaped and continue to shape the world of improvisational theater throughout theater history. Studies and practice culminate in final improvisation performance project.

THTR 240 Acting I **3c-0l-3cr**

Prerequisite: THTR 140

The study of the primary elements of the Stanislavski system of character development. Includes text analysis and the development of physical action through a character's subtext, as well as motivational and improvisational techniques.

THTR 281 Special Topics **var-1-3cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 281 are offered primarily for lower-level undergraduate students.

THTR 310 Theater Criticism **3c-0l-3cr**

Prerequisite: Junior or senior theater major status or permission

Gives students of theater an opportunity to use what they have learned in the areas of theater (acting, directing, design, and playwriting) toward the critical process of responding to theater productions. Examines differences between theater criticism and theater reviews while learning to write critical responses to live performances both on and off campus.

THTR 311 Dramaturgy **3c-0l-3cr**

An introduction to the study and profession of dramaturgy. A study of the historical significance of the dramaturg through the reading of early and modern practitioners. An examination of a number of critical theories that students will use to contextualize play scripts under study. Performance of such dramaturgical tasks as identifying script references, historicizing social conventions and customs, comparing translations of notable foreign plays, preparing information packets for actors, directors, and design teams, draft-

ing program notes, and organizing talkbacks. An opportunity to provide services for a department production. (Cross-listed as ENGL 309.)

THTR 313 American Theater Between the Wars **3c-0l-3cr**

Surveys popular and significant American plays written and produced in the 1920s and 1930s. Examines theatrical styles, trends, and themes that reflect the era's values and the challenges and threats to those values. Analyzes and compares the work of playwrights, directors, performers, and designers within the historical and social contexts of the past Great War and the impending Second World War, as well as formulates comparisons to the world of the 21st century.

THTR 320 Scene Design **3c-0l-3cr**

Prerequisite: THTR 116 or permission

An introduction to scenic design that applies the fundamental principles of theatrical design. Topics include an overview of current scene design practice, design conceptualization, graphic communication methods, and a method of designing theatrical scenery. Practical applications are emphasized through a series of class exercises.

THTR 321 Stage Lighting Design **3c-0l-3cr**

Prerequisite: THTR 116 or permission

An introduction to stage lighting that applies the fundamental principles of theatrical design. Stage lighting topics include an overview of current lighting methods and equipment, the controllable properties and functions of stage lighting, learning to see light, a creative approach to stage lighting, and design graphics. Practical applications are emphasized through a series of class exercises.

THTR 322 Costume Design **3c-0l-3cr**

Prerequisite: THTR 116 or permission

An introduction to the discipline of costume design for the theater with an emphasis on script analysis, figure drawing, character definition, and control of the design elements, supplemented by an overview of costume history.

THTR 323 Sound Design **3c-0l-3cr**

Covers the basic principles and theories of designing sound for the theater. Through demonstration and practical application, covers the following principal areas: basic electronics, recording techniques and equipment, musical and effects integration, theater acoustics, designing sound, and sound reinforcement.

THTR 340 Acting II **3c-0l-3cr**

Prerequisite: THTR 240

A continuation of the study of Stanislavski system, focusing on his primary texts, toward a development of individual student techniques. Emphasizes scene study through applying techniques to scene rehearsal and role problems and exploring the relationships between psychological states, physical action, and truth in acting.

THTR 341 Acting Styles **3c-0l-3cr**

Prerequisites: THTR 130/131, 240 or instructor permission

A study and practice of advanced acting skills, with special emphasis on style and period. Possible areas of focus: Greek Classical, Commedia Dell'Arte (farce), French Neoclassical, Restoration Comedy, Melodrama, High Comedy (Wilde/Coward), or Theater of the Absurd.

THTR 342 Acting Shakespeare **3c-0l-3cr**

Prerequisites: THTR 240, 340 or instructor permission

An advanced acting studio that prepares students to perform in Shakespeare's plays. A background overview of the Elizabethan period in addition to various methods toward approaching the movement, language, and verse forms from an actor's point of view.

THTR 347 Playwriting **3c-0l-3cr**

Prerequisite: THTR 111 or instructor permission

A practical exploration of the craft and process of playwriting. Focuses primarily on the practical, "hands-on" experiences approximating the "developmental process" currently in use in the American theater. The student is guided from the initial concept through synopsis, outlines, working drafts, and completion of an original one-act play and a "staged reading" of this project. Note: Cross-listed as ENGL 347. Either of these courses may be

substituted for each other and may be used interchangeably for D/F repeats but may not be counted for duplicate credit.

THTR 350 Directing **3c-0l-3cr**

Prerequisites: Minimum of THTR 240 and instructor permission. Written application to the instructor is required.

An introduction to basic directing skills: casting, floor plans, blocking, rehearsal procedures, and the applications of scene and character analysis. Prepare short scenes for class presentation.

THTR 361 The Performance of Caring **3c-0l-3cr**

Prerequisite: Priority enrollment for Nursing and Allied Health majors, or by instructor permission

Using acting skills to engender healing relationships. A creative, empathetic, and practical approach to preparing future healthcare professionals with enhanced skills in the art of establishing and building patient and colleague relationships. Content is delivered, and student learning is facilitated, through the use of approaches common to the training of performing artists.

THTR 371 Musical Theater History **3c-0l-3cr**

Surveys the development of musical theater as a performing art form in America. Examines the ways musicals both reflect and embody values, tastes, and trends from their respective historical eras. Explores musical theater from historical, political, social, and aesthetic perspectives. Focuses on the beginnings of musical theater to the present with emphasis on the cultural development and impact of the art form.

THTR 372 Musical Theater Auditioning **3c-0l-3cr**

Prerequisite: THTR 240 or instructor permission

Introduces the study of audition techniques for musical theater, music, scene, and lyric analysis, and characterizations addressed. Enhances and improves audition and performance skills as well as the ability to find and choose appropriate audition material.

THTR 373 Musical Theater Scene Study **3c-0l-3cr**

Prerequisite: THTR 240 or instructor permission

An intensive text and score analysis in relation to the process of characterization for the actor, singer, dancer in musical theater focused through musical scene work into song performance. In addition, basic insights and strategies for a professional career in theater are presented.

THTR 471 Musical Theater Performance **3c-0l-3cr**

Prerequisite: THTR 240 or instructor permission

For more advanced acting and musical theater students interested in developing musical theater skills in a rehearsal/production format. Using a contemporary American musical chosen by the instructor, students are taught to apply acting, singing, and dance techniques to bring characters to life on stage. Class culminates in a final performance but will focus more on the text, the music, and the fullness of the characterizations as opposed to the technical elements of the production.

THTR 480 Theater Seminar **1c-0l-1cr**

Prerequisites: THTR 111, 486, senior standing

Capstone course for majors. Students complete work on their senior thesis project and examine career options. Students develop résumés, portfolios, and other materials particular to their education as a theater or dance artist and their aspirations for a career or postgraduate studies in a creative field. Offered fall semester only.

THTR 481 Special Topics **var-1-6cr**

Prerequisite: As appropriate to course content

Offered on an experimental or temporary basis to explore topics not included in the established curriculum. A given topic may be offered under any special topic identity no more than three times. Special topics numbered 481 are primarily for upper-level undergraduate students.

THTR 482 Independent Study **var-1-6cr**

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost

Independent study in theater may be either purely academic or may be a practical production project, supported by a written document giving evi-

dence of significant scholarly investigation or original, creative effort. May be repeated to a maximum of 6cr. Approval is based on academic appropriateness and availability of resources.

THTR 484 Directing Studio **3c-2l-3cr**

Prerequisites: THTR 350 or instructor permission. Written application to the instructor is required.

An opportunity for students to direct scene work, one-act plays, or larger projects, according to individual levels of experience, preparation, and readiness, as well as program resources. The focus is on practical application of directing principles to specific issues. Student projects are performed in public, open-class recitals. May be repeated.

THTR 486 Practicum in Production **var-0-3cr**

Prerequisite: Theater major standing or instructor permission

An opportunity with academic credit to make significant contributions to campus productions augmenting theater course work in the areas of directing, acting, stage management, technical direction, design (sound, set, lights, costumes, makeup), properties, scenic construction and scenic art painting, costume technology, dance, and running crews. Repeatable course required of all theater majors for a minimum of six semesters, one of which must be a final project for senior majors.

THTR 487 Acting Studio **3c-0l-3cr**

Prerequisites: Minimum of THTR 240 or instructor permission. Written application to the instructor may be required when necessary.

An advanced studio course offering scene practice with faculty direction, coaching, and criticism. Specific focus of scene work varies from semester to semester, including improvisation techniques, stage dialects, audition techniques, stage combat, physical theater, and acting for the camera as alternating semester options. May be repeated with a different focus each time.

THTR 489 Design/Technology/Management Studio **3c-0l-3cr**

Open to all students desiring instruction in a variety of technical theater areas not presently covered in other courses. Topics to include stage management, set props, media makeup, technical drawing/mixed media, costume technology, and scene painting. May be repeated with each different topic area.

THTR 493 Internship **var-3-12cr**

Prerequisite: Instructor permission

Opportunities for students to gain experience with professional performance organizations in areas related to theater and dance.

TMWK: Effective Teamwork and Communication Studies **Academic Affairs Division**

TMWK 461 Teamwork and Communication Capstone **1c-0l-1cr**

Prerequisite: Any independent study, undergraduate research, or honors thesis (may be taken concurrently)

Capstone course for those minoring in effective teamwork and communication. Reflective nature of the course builds on core foundational material and in-major teamwork experiences. Emphasizes development of students' philosophies of teamwork and communication through reflection and practice. Coupling of in-major independent study, undergraduate research, or honors thesis, by means of an interdisciplinary, semester-long project enhances real-world team experiences valued by future employers and graduate programs. Promotes the importance of showcasing team and communication skills to future employers through resume, cover letter, and portfolio.

**UVWD: University-wide Courses
Academic Affairs Division**

UVWD 480 T.H.I.S. Seminar 3c-0l-3cr

An academic seminar taken at the Pennsylvania State System of Higher Education University Center in Harrisburg in conjunction with the T.H.I.S. internship. Consists of public policy information, decision making, and budgeting and addresses question-and-answer sessions with leading state government policymakers. See description under Academic Affairs area. Restricted to the T.H.I.S. internship participant. See UVWD 493.

UVWD 493 T.H.I.S. Internship var-12cr

A practical experience at the policymaking level of the state government that also requires a research project. Must have a 3.0 GPA and submit a sample of writing skills with the application to the Academic Affairs office. Open to any IUP major. See description under Academic Affairs area. Concurrent seminar course required. See UVWD 480.

**VOED: Vocational Education
Center for Career and Technical Personnel Preparation
College of Education and Communications**

VOED 100 Preparation of the Vocational Professional I var-1-15cr

Personalized, self-paced vocational teacher preparation. Develops, demonstrates, and documents competence in selected pedagogical competencies. Individualized instruction is supplemented with monthly seminars. Self-evaluation is encouraged in the program, utilizing videotaping and the feedback from a team of professional teacher educators.

VOED 101 Introduction to Career and Technical Education 1c-0l-1cr

Prerequisite: Recommendation by Western Region Career and Technical School director
Emphasizes basic elements of teaching in the diverse secondary career and technical classroom. A field-based course focusing on skill areas defined by the Pennsylvania Department of Education—Bureau of Career and Technical Education, such as classroom safety, accommodations for students with special needs, and classroom management.

VOED 102 Instructional Planning in the Career and Technical (CTE) Classroom 2c-0l-2cr

Prerequisite: VOED 101
Instructional planning for the CTE classroom and laboratory delivered through field-based instruction. Major emphasis is on planning for instruction, safety procedures, and CTE performance objectives. Instructional plans will include consideration of individual learning styles and accommodations for students with special needs.

VOED 103 Strategies for Teaching Career and Technical Education 3c-0l-3cr

Prerequisites: VOED 101, 102
Introduces instructional strategies and evaluation methods appropriate in career and technical education. Emphasis is on the planning and delivery of lessons that apply these strategies in the secondary career and technical classroom. Special attention is given to adapting and individualizing instruction for the diverse student population enrolled in the career and technical class. A field-based course with classroom visitations by a university faculty member.

VOED 201 Making Accommodations for Students with Special Needs in the Career and Technical Classroom 1c-0l-1cr

Prerequisites: VOED 101, 102, 103
A companion course to EDEX 301. Students apply instructional methods effective for educating students with disabilities and learning style differences in their career and technical classroom. A field-based course with classroom visitations by a university faculty member.

VOED 202 Industry Linkages for Career and Technical Programs 3c-0l-3cr

Prerequisite: VOED 201
Addresses the requirements for industry input and validation for all secondary career and technical programs and focuses on developing and maintaining an effective occupational advisory committee. Emphasis is on the teacher's responsibility for providing appropriate information to the committee and taking action to follow up on the committee's recommendations.

VOED 203 Incorporating Reading and Communications Strategies in the Career and Technical Classroom 3c-0l-3cr

Prerequisites: VOED 102, 103
Addresses methods and materials for assisting students as they read, study, and learn in the career and technical classroom. Emphasis is on approaches that facilitate learning of both content and process. Current research is explored, and classroom applications are emphasized for integrating academic standards. A field-based course with classroom visitations by a university faculty member.

VOED 301 Integrating Math and Science in Career and Technical Education 3c-0l-3cr

Prerequisite: Completion of course work for Vocational I certificate
Focuses on the integration of math- and science-related content in the career and technical classroom. Current Pennsylvania Department of Education mandates and strategies for meaningful integration and assessment are addressed. Facilitating the academic skill development of secondary career and technical students is emphasized. A field-based course with classroom visitations by a university faculty member.

VOED 302 Career Education in the Career and Technical Classroom 3c-0l-3cr

Prerequisite: Completion of course work for Vocational I certificate
Emphasizes current labor market statistics and resources for identifying labor market trends. The influence of interests, aptitudes, and work style preferences in making informed career decisions are explored. The role of career and technical student organizations, articulation agreements, and work-based learning to enhance career education in the career and technical classroom are discussed. The emphasis is on integrating career information relevant for the career and technical program in the classroom and a review of the mandates for this integration.

VOED 395 Vocational Education Writing Experience 0c-0l-0cr

Writing assignments such as abstracts, logs of activities, philosophy papers, training plans, presentation plans, lesson plans, etc., are completed in conjunction with selected instructional modules from VOED 100 and 400.

VOED 400 Preparation of the Vocational Professional II var-1-15cr

Prerequisite: Successful completion of VOED 100
Personalized, self-paced vocational teacher preparation. Develops, demonstrates, and documents competence in selected teaching skills in the areas of program planning, program development, program evaluation, and managing and evaluating instruction in a vocational school setting. Self-evaluation is encouraged in the program, utilizing videotaping and the feedback from a team of professional teacher educators.

VOED 402 Special Topics in Vocational Pedagogical Preparation var-1-15cr

Prerequisite: Center permission
Opportunities to develop additional teaching skills under professional supervision. Topics are determined through identification of priority areas in vocational education using national and state surveys and students' individual needs.

VOED 403 Assessment and Evaluation in Career and Technical Education 3c-0l-3cr

Prerequisite: Completion of course work for Vocational I certificate
The preparation, administration, and scoring of classroom assessments aligned with curriculum and instruction in the career and technical classroom is emphasized as well as analysis and interpretation of test results. Attention is given to the design of performance assessments and the definition

of acceptable levels of performance. Checklists and rating scales and their application in the career and technical classroom are included along with formative and summative assessment.

VOED 404 Research in Career and Technical Education

3c-0l-3cr

Prerequisite: Completion of course work for Vocational I certificate
Introduces research in the career and technical classroom. An emphasis is placed on using a variety of research methods to solve problems in the educational environment. Research findings are implemented into the classroom environment and results are shared with peer career and technical teachers.

VOED 405 Professional Seminar in Career and Technical Education

3c-0l-3cr

Prerequisite: Completion of course work for Vocational I certificate
A history of career and technical education; the impact of the educational reform on career and technical education and workforce development and career and technical education's importance within our society. Topics include leaders in vocational education; societal influences on vocational curriculum design; and professional responsibilities, legislative initiatives, social issues, and organizations involved in and affecting career and technical and workforce development education. A capstone course focusing on the professional growth of the career and technical teacher intern.

VOED 450 Technical Preparation of the Vocational Professional

24cr

Competency assessment of occupational experience through national standardized written and performance examinations.

**WGS: Women's and Gender Studies
Women's and Gender Studies Program
College of Humanities and Social Sciences**

WGS 200 Introduction to Women's and Gender Studies

3c-0l-3cr

An interdisciplinary, cross-cultural survey of the ways in which gender interacts with race, age, class, ethnicity, nationality, and other dimensions of identities to shape human consciousness and determine the social, political, and cultural organizations of human institutions and societies.

WGS 301 Asian American and Asian Diasporic Women's Literature

3c-0l-3cr

Introduces more than 100 years of the unique, diverse, and dynamic literary tradition of the 20th and 21st century Asian American and Asian diasporic women's literature in a wide range of Asian cultural, historical, national, global, and American multiethnic contexts. Intersects and is enriched by gender, race, ethnicity, class, sexuality, language, immigration, global migrant labor, citizenship, decolonization, as well as Asian indigenous and ethnic women's histories.

WGS 400 Feminist Theories

3c-0l-3cr

Introduces the vigorous, interdisciplinary, complex, and diverse intellectual history of feminist theories, methodologies, and politics. Includes classical feminist advocacy from early centuries to feminist theories in early 21st century, from Euro-American feminist philosophical traditions to the more global, multicultural, intersectional, and continuously multidisciplinary feminist criticisms, with rich dialogues crossing periods and borders. Intersects and is enriched by multiple critical categories of gender, sexuality, class, race, ethnicity, nation, culture, knowledge, and power. Stimulates, engages with, and empowers students. Encourages students to actively apply feminist knowledge to their own cross-disciplinary learning, personal growth, empowerment, and activist social transformation.

WGS 482 Independent Study

var-1-3cr

Prerequisite: Prior approval through advisor, faculty member, department chairperson, dean, and Office of the Provost
An opportunity to engage in an in-depth analysis of some topic through consultation with a faculty member. A semester project ordinarily expected. Approval is based on academic appropriateness and availability of resources.