COURSE DESCRIPTIONS

COURSE NUMBERS

The course-numbering system indicates the college level at which courses are normally taken.

NUMBERING SYSTEM GUIDE

001-009	precollege course-no credit
010-099	credit granted but not applicable to graduation
100-199	primarily for first-year students
200-299	primarily for second-year students
300-499	primarily for upper division students
500-599	graduate courses
600-799	doctorate courses

At the end of each description, course credits are listed. Courses with variable hours and credits are so indicated.

SEMESTER SCHEDULE

Notation to the right of the course name indicates when the course is offered. If a notation is not included, the course is offered as needed.

DEPARTMENTAL OFFERINGS

ARBC – ARABIC

ARBC 101 Elementary Arabic I **3 credits**

Students will study the Arabic script and phonology of the five major dialectical areas as well as acquiring an overview of these geographical areas. Emphasis will be placed on acquisition of the Arabic script, pronunciation, and learning simple dialogues.

ARBC 102 Elementary Arabic II **3 credits**

Students will study the grammatical case system for the singular, dual and plural. They will also begin the trilateral and quadrilateral radical system. Emphasis will be placed on improving pronunciation and on learning simple dialogues. Prerequisite: ARBC 101.

ARBC 201 Intermediate Arabic I **3 credits**

Students will increase their proficiency in reading, translation, and writing in the ruq'a script. Emphasis will be placed on situational dialogues and on grammatical analysis. Prerequisite: ARBC 102.

ARBC 202 Intermediate Arabic II **3 credits**

Students will increase their proficiency in pronunciation and the facility in the use of the Arabic script. Emphasis will be placed on speaking, reading, and writing skills, using simple short texts, situational dialogues, and grammatical analysis. Pre-requisite: ARBC 201.

BIOL – BIOLOGICAL SCIENCES

BIOL 101 General Biology I **3 credits**

An introduction to the cell as the basic unit of life, its structures, functions and the extension of these aspects to all living organisms. Laboratory section: BIOL 103.

BIOL 102 General Biology II **3 credits**

The development and maintenance of life including the relationship of organisms to each other and to their environment; the process and results of evolution. Laboratory section: BIOL 104.

BIOL 103 General Biology Laboratory I **1 credit**

Development of basic laboratory skills illustrating important biological principles. Prerequisite or co-requisite: BIOL 101.

BIOL 104 General Biology Laboratory II **1 credit**

Development of basic laboratory skills illustrating important biological principles. Prerequisite or co-requisite: BIOL 102.

BIOL 205 Botany **4 credits**

A brief summary of the plant kingdom with emphasis on the structure and function of important members and their ecologic and economic role in ecosystems. This includes a 1 credit lab. Prerequisites: BIOL 101, BIOL 102.

BIOL 206 Zoology **4 credits**

The taxonomy of the protozoa and metazoa as well as the morphology and physiology of the major homeostatic organ systems are studied from a comparative and evolutionary point of view. The laboratory consists of a study of selected organisms which best demonstrate the theory and principles of homeostasis. This includes a 1 credit lab. Prerequisites: BIOL 101, BIOL 102.

BIOL 210 Biological Evolution **3 credits**

The study of the Theory of Biological Evolution. An historical approach leading to Darwin's Theory of Natural Selection; understanding Darwin's Theory and its implications for science and society; a study of the evidences for demonstrating the validity of biological evolution; and some of the new frontiers of scientific research which validates the classical evolutionary argument. Prerequisites: BIOL 102 or NSET 111.

BIOL 216 Microbiology **4 credits**

Microorganisms with special reference to bacteria; the basic concepts and laboratory techniques. Protozoa, algae, fungi, viruses and rickettsia are included. Prerequisites: BIOL 101; CHEM 101.

BIOL 222 Introduction to Genetics **4 credits**

The principles of hereditary transmission, expression and interaction in individuals and populations are studied. The development of procedures and techniques used in the study of genetics, including plant, animal and protista life cycles; segregation analysis, cytogenetic techniques, mutagenesis and biochemical pathway analysis are covered. Prerequisites or co-requisites: BIOL 102; MATH 175.

BIOL 225 Anatomy and Physiology I **4 credits**

Part one of a two-semester course in the structure and function of the systems of the human body. The chemical composition and structure of the cells that make up the tissues and organs of the integumentary, skeletal, nervous and muscular systems. Emphasis on normal and abnormal functioning of these systems in regard to maintaining homeostasis. Prerequisites: BIOL 101/103.

BIOL 226 Anatomy and Physiology II **4 credits**

Part two of a two-semester course in the structure and function of the systems of the human body. The hormonal, respiratory, circulatory, digestive, excretory and reproductive systems. Emphasis on normal and abnormal functioning of these systems and the systems covered in Anatomy and Physiology I in regard to maintaining homeostasis. Prerequisite: BIOL 225.

BIOL 231 Economic Botany **3 credits**

A study of the history, characteristics and origin of plants used in industry and agriculture as well as future use of plants in the production of energy, food and materials. Prerequisite: Any 100-level Biology course.

BIOL 235 Introduction to Ecology **3 credits**

A study of the principles which govern the interrelationships between the biosphere, atmosphere, hydrosphere and lithosphere components of a system of ecosystems, i.e., the ecosphere. Ethical concerns will be discussed throughout the course. Prerequisites: BIOL 102, CHEM 102, NSET 111.

BIOL 243 Public Health **3 credits**

Introduction to selected topics in immunology and epidemiology and their applications to public health. Prerequisite: Any 100-level Biology course.

BIOL 254 Elements of Human Nutrition **3 credits**

Coverage of the carbohydrates, lipids and proteins as they relate to the composition of food material. Their role in metabolism along with the vitamins and micronutrients necessary for a balanced dietary regime. The digestive system and related accessory organs with respect to digestion and absorption.

BIOL 300 Receptors, Signaling Pathways and Cellular Control Mechanisms **3 credits**

A study of the major neurocrine, endocrine and cellular receptors, the signaling pathways through which they interact, and their importance. Prerequisite: BIOL 211.

BIOL 310 Bioinformatics **3 credits**

An introduction to the new technologies used in modern biological research including: bioinformatics, combinatorial chemistry, high throughput screening, transgenics, nanotechnology, machine vision, in silico-biology, etc. Prerequisite: Junior Standing.

BIOL 320 Biochemistry **3 credits**

This course addresses the aspects of enzyme kinetics that govern cellular reactions. Topics also include protein structure and function, generation of metabolic energy, biosynthesis of macromolecules, processing of information, and membrane transport. The information is then integrated in terms of overall metabolism and mutations that result in metabolic diseases. Dual listed as CHEM 320. Prerequisite: CHEM 221.

BIOL 324 Human Genetics **3 credits**

The general principles of segregation, modes of inheritance, cytogenetics and population genetics as they apply to normal and pathological conditions in humans. The principles of genetic engineering including recombination, cloning and artificial insemination with special reference to the ethical, physical, social and legal implications. Pedigree construction and analysis are an integral part of the course. Prerequisites: BIOL 101, BIOL 102 or BIOL 111.

BIOL 334 Occupational Safety and Health **3 credits**

An introductory course dealing with the recognition, evaluation and control of occupational health hazards. Study of the work place, including safety and health standards, using the principles of biology, chemistry, physics, engineering and law. Prerequisite: Junior standing.

BIOL 341 Environmental Health **3 credits**

A study of the effects of the environment on health and the prevention of resulting diseases and disability. Includes air pollution, water pollution, problems of solid waste disposal, toxic hazards, food protection, housing, insect vectors and rodents, noise and accidents. Prerequisite: Junior standing.

BIOL 350 Molecular/Cellular Biology **4 credits**

A survey of basic biochemistry including biomolecules; proteins, enzymes, carbohydrates, lipids; and bioenergetics and metabolism. This course contains a module in basic molecular biology includes gene regulation, transcription, translation and replication. Laboratory activities including simulations are integrated into the course. Prerequisites: CHEM 222; BIOL 222.

BIOL 365 Developmental Biology **3 credits**

This course describes the development patterns of model organisms and applies these principles to the study of human disease. Topics include differentiation, morphogenesis, regeneration growth and tissue repair, and genetic and epigenetic control of development processes. Laboratory activities that demonstrate these principles are integrated into the course. Prerequisites: BIOL 101, BIOL 102, BIOL 222.

BIOL 410 Comparative Vertebrate Anatomy **3 credits**

This course emphasizes the adaptations of vertebrate morphology to the environmental conditions faced by vertebrates and their chordate ancestors in the remarkable range of habitats and conditions under which they occur. Structure-function relationships of the organs/organ systems, and the range of structural and evolutionary modifications of organ systems seen in different vertebrate classes will be covered. Also examined are the evolutionary history and phylogenetic relationships of the major vertebrate groups and vertebrate development. Prerequisite: BIOL 102/104.

BIOL 420 Immunology **3 credits**

This course covers cellular and acellular aspects of innate and specific immunity. Hematopoesis, molecular aspects of cellular development, maturation, activation and function are covered. Also discussed are the molecular aspects of recognition. Particular attention will focus on T-cell-mediated and humoral responses, and acquisition and interactions with normal flora. Pre/Co-requisites: BIOL 216, BIOL 350.

BIOL 443 Applications in Environmental Science **3 credits**

The course will cover issues involved in protecting the environment that may include degradation, conservation, recycling, and replenishment that are central to the work of environmental scientists. Students will be introduced to scientific equipment utilized in the field of environmental science and are required to complete a research assignment for their final project. Prerequisite: Junior standing.

BIOL 445 Advances in Environmental Health **3 credits**

Includes a survey of recent research in the area. Guest lecturers discuss current problems and possible solutions. Prerequisite: BIOL 341.

BIOL 447 Environmental Science Seminar **3 credits**

A required course for all seniors in the Environmental Science concentration that addresses major topics in environmental science. Formal presentation by faculty, students and invited speakers as well as scientific journal readings will promote discussion from multi-disciplinary perspectives. Prerequisite: Senior standing.

BIOL 448 Radiation Health and Protection **3 credits**

A survey of radiation health including the origin, nature and interactions of ionizing radiation, and nonionizing reduction; the biological effects of radiation; assessment of hazards; radiation protection methods and current problems and controversies surrounding the field. Prerequisite: CHEM 102.

BIOL 449 Biology Seminar **3 credits**

This communication-intensive course is a capstone experience for Biological Science Majors. The course will focus on designing research projects, writing for the sciences, presentations and discussions. Formal presentation by invited speakers as well as scientific journal readings will promote discussion from multidisciplinary perspectives. Prerequisite: Junior/Senior Standing

BIOL 450 Virology **3 credits**

The major virus families are discussed with respect to classification, viral genome, structure, pathogenesis, epidemiology and control. The course focuses primarily on animal viruses but also covers bacteriophage, plant viruses and unconventional agents such as prions. Basic aspects such as life cycle, replication, targeted drug development and applications in biotechnology will be discussed. Pre/Corequisites: BIOL 216, BIOL 350.

BIOL 451 Drug Discovery and Development **3 credits**

A study of how modern human and animal pharmaceuticals and agrochemicals are discovered, patent protected, developed, approved, marketed and sold in the US and around the world. Prerequisite: Senior Standing.

BIOL 456 Advances in Nutrition **3 credits**

Recent findings on the methods and regimes to nourish infants, adolescents and the geriatric population. Controversial and classical methods are evaluated and analyzed. Pre/Corequisite: BIOL 254.

BIOL 295, BIOL 395, BIOL 495 Special Topics in the Biological Sciences I, II, III **1-6 credits**

BIOL 296, BIOL 396, BIOL 496 Independent Study in the Biological Sciences I, II, III **1-6 credits**

BIOL 499 Honors Internship in Biology **1-6 credits**

Available to qualified students as a practicum within the University or in conjunction with an external agency. Requires regular progress reports and a final paper. May be repeated for credit. Prerequisites: Consent of an instructor to act as a sponsor, acceptance by an agency if applicable, approval of the department chair, an overall G.P.A. of 3.30 and a departmental G.P.A. of 3.50.

CE – CIVIL ENGINEERING

CE 205 Introduction to Surveying 3 credits

A study of plane surveying and topographic mapping. Determination of land areas, construction surveys and layouts, control surveys, boundary surveys, route locations and street layout. Provides experiences with the use of equipment, instruments, and the fundamental techniques of surveying. Prereq: EGR 205, MATH 181.

CE 209 Engineering Geology 3 credits

A study of plane surveying and topographic mapping. Determination of land areas, construction surveys and layouts, control surveys, boundary surveys, route locations and street layout. Provides experiences with the use of equipment, instruments, and the fundamental techniques of surveying. Prereq: EGR 205, MATH 181.

CE 213 Strength of Materials 3 credits

Introduction to the mechanical behavior of materials, stress/strain , principle stresses and strains (stress and strain transformations/Mohr's circle), stress-strain relationships. Determination of stresses and deformation for axial, flexural, torsional, thermal, and combined loadings. Determinations of stresses in pressure vessels. Prerequisites: ME 101, CE 212. Pre/Corequisite: MATH 190.

CE 214 Strength of Materials Lab 1 credit

The laboratory exercise will introduce students to common laboratory equipment and techniques and will illustrate and extend some of the concepts that are discussed in class and the textbook. Students will also practice setting up and performing a laboratory. Students will also practice recording observations and presenting the results to an engineering audience. Pre/Corequisite: CE 213.

CE 309 Soil Mechanics 3 credits

A study of the properties of soil and their application to design. Equations of consolidation, stress and settlement, stability of cuts, shear strength, subsoil stresses, bearing capacity, seepage-drainage and frost action. Prerequisites: CE 209.

CE 310 Structural Analysis 3 credits

A study of the properties of soil and their application to design. Equations of consolidation, stress and settlement, stability of cuts, shear strength, subsoil stresses, bearing capacity, seepage-drainage and frost action. Prerequisites: CE 209.

CE 315 Concrete Structural Design 3 credits

Study of reinforced concrete analysis and design. Topics covered include codes, fundamental mechanics, beam bending, beam shear and beam deflection. Prerequisite or Corequisite: CE 310.

CE 316 Steel Structural Design 3 credits

Study of design and behavior of steel structures. Topics covered include the advantages and properties of steel, the availability of shapes, safety and risk, and the specification and use of design equations. Designs approaches using current AISC documents will be presented for tension, compression, beam and frame members. Comments on connection practice will also be included. Some design assignments will be performed using commercial computer applications. Prerequisites: ME 212, CE 310.

CE 319 Soil Mechanics Lab 1 credit

Standard laboratory soil test are performed to determine the physical and mechanical properties of soils. ASTM test methods for moisture content, density, permeability, Atterberg Limits, compaction, particle size, and shear strength will be conducted. Formal memo laboratory reports will be prepared. Co-requisite/Prerequisite: CE 309.

CE 320 Environmental Engineering Technology I 3 credits

A survey of the principles of environmental engineering technology including environmental chemistry, materials, and energy balance, water quality management, water and wastewater treatment, ethics, and government regulations. Pre req: CHEM 102, MATH 190, and EGR 101.

CE 321 Environmental Engineering Technology II 3 credits

A survey on the principles of environment engineering technology including air pollution, solid and hazardous waste management, noise and light pollution, ethics and government regulations. Prereq CE 206

CE 401 Construction Management **3 credits**

A study of the planning, administration, management, and cost of construction projects and an introduction to the methodology utilized in executing specified designs. Emphasis is placed on organization of construction firms, development of construction documents, theory of estimating and quantity take-off. contractual and management systems, scheduling, project administration and inspection of construction operations, and construction documents reading. Prereq: ECON 202

CE 407 Civil Engineering Capstone **3 credits**

The central feature of this course is a team design project that includes all aspects of civil engineering design process from a proposal through the design, verification, and documentation of a finished technical product. the laboratory period is devoted to the design project. The lecture period includes presentations and discussions on engineering project management, engineering economic analysis, professional ethics, and social factors in engineering design. Students working in teams will plan, design, and complete a faculty approved project that integrates technical and non-technical skills. The course will include case studies, online learning experiences, and both written and oral presentations. Prereg: 18 credits of Department Major Requirements at the 300 or 400 level.

CE 409 Foundations Design **3 credits**

Students apply knowledge of geotechnical engineering theory to the design of foundations and retaining walls. Use knowledge of shear strength, bearing capacity, and lateral earth pressures in their designs. Course content will include an introduction to shallow and deep foundation systems, lateral earth pressure and earth retention systems. Design applications in each arena will be included. Prereqs: CE 309 and CE 310.

CE 410 Transportation Engineering **3 credits**

A course in route location and safety design. The route location elements of the course include topics from: travel demand and factors affecting preliminary route location, types of highway, use of topo maps for the selection of tangents, circular curve design and layout, vertical curves, and spirals. The safety topics include: reaction times, stopping distances, passing distances, superelevation and widening. Brief coverage of the use of influence lines for the structural analysis of beam and truss bridges will also be covered. Highway design computer applications will be used on selected assignments. Prerequisites: CE 205. CE 209, ME 102, and MATH 330.

CE 411 Fluid Mechanics **3 credits**

The study of the physical behavior of incompressible and compressible fluids and fluid systems. Hydrostatic and hydrodynamic systems are considered. Fluid transmission and control applications include the design of weirs orifices, and valves. The determination of pressure losses in open and closed systems is covered. Other topics include the storage of energy by pressurized fluids in closed systems. Prerequisites: ME 102, MATH 210, PHYS 201.

CE 412 Fluid Mechanics Lab **1 credit**

Introduces students to the special tools used by fluid power industries and the manual skills required in implementing fluid mechanics applications. Special techniques in flow measurement and implementation. . Prerequisite: CE 411.

CE 418 Hydraulics **3 credits**

A study of flow in pipes, open channels and hydraulic structures. Brief coverage of runoff models, groundwater and wells. Prerequisite: CE 411.

CET – CIVIL ENGINEERING TECHNOLOGY

CET 206 Environmental Engineering Technology I **3 credits**

A survey of the principles of environmental engineering technology including environmental chemistry, materials, and energy balance, water quality management, water and wastewater treatment, ethics and government regulations. Prerequisites: CHEM 102; MATH 180; NSET 101.

CET 212 Properties of Materials **3 credits**

A study of atomic and crystalline structure as a means of understanding material behavior. The influence of defects, strengthening mechanisms and heat treatments are examined. Mechanical strength properties in tension/compression, shear, hardness and impact and related test procedures are investigated. The Iron-Carbon phase diagram is studied. Coverage also addresses ceramics, plastics and composites. Dual listed as MET 212. Prerequisite: CHEM 101.

CET 317 Concrete Mix Design Laboratory **1 credit**

Students will perform the basic tests used in the field of concrete mix design to determine if a mix is suitable for use. Test batches will be mixed, cylinders and beams will be produced, and compression and flexure tests will be conducted. Additionally, air permeability and slump tests will be presented. Prerequisite or co-requisite: CET 315.

CET 405 Software Tools for Civil Engineering Technologists **2 credits**

A series of "Senior" design projects selected from the major Civil Engineering Technology specialties to be conducted using commercial engineering software. Projects may include: surveying, drafting, mapping, geotechnical design, structural design, hydraulic design, highway location design and site development. Project management and scheduling software will be covered. Students may substitute a project in a specialty not normally covered, with the permission of the instructor. Prerequisite: Senior Standing.

CET 194, CET 294 Special Topics **3 credits**

CET 295, CET 395, CET 495 **1-6 credits**
Special Topics in Civil Engineering Technology I, II, III

CET 296, CET 396, CET 496 **1-6 credits**
Independent Study in Civil Engineering Technology I, II, III
Specialized Instructional Fee.

CET 499 Honors Internship in Civil Engineering Technology **1-6 credits**
See BIOL 499 for course description.

CHEM – CHEMISTRY

CHEM 101 General Chemistry I **3 credits**

Topics include atomic theory and structure, chemical bonding, properties of the elements and the periodic table, chemical equations and stoichiometry, states of chemical matter, equilibrium and kinetics, thermodynamics electrochemistry and selected topics in descriptive chemistry. Laboratory section: CHEM 103.

CHEM 102 General Chemistry II **3 credits**

Continuation of CHEM 101. Laboratory section: CHEM 104. Prerequisite: CHEM 101.

CHEM 103 General Chemistry Laboratory I **1 credit**

Basic laboratory skills illustrating important chemical principles. Prerequisite or co-requisite: CHEM 101.

CHEM 104 General Chemistry Laboratory II **1 credit**

The application of the principles of ionic equilibrium to qualitative inorganic analysis. Prerequisite or co-requisite: CHEM 102. Prerequisite: CHEM 103.

CHEM 221 Organic Chemistry **3 credits**

A systemic study of the compounds of carbon including both aliphatic and aromatic series. Special emphasis given to stereochemistry and reaction mechanisms. Prerequisite: CHEM 102.

CHEM 222 Organic Chemistry II **3 credits**

A continuation of CHEM 221 concluding with a survey of the elements of modern biochemistry. Prerequisite: CHEM 221.

CHEM 223 Organic Chemistry Laboratory **2 credits**

Introduction to the fundamental methods of synthesis, isolation and analysis, including instrumental techniques. An individual project including a written report and oral presentation are required. Prerequisite: CHEM 103. Co-requisite: CHEM 222.

CHEM 320 Biochemistry **3 credits**

This course addresses the aspects of enzyme kinetics that govern cellular reactions. Topics also include protein structure and function, generation of metabolic energy, biosynthesis of macromolecules, processing of information, and membrane transport. The information is then integrated in terms of overall metabolism and mutation that result in metabolic diseases. Dual listed as BIOL 320. Prerequisite: CHEM 221.

CHEM 194, CHEM 294 Special Topics **3 credits**

CHEM 295, CHEM 395, CHEM 495
Special Topics in Chemistry I, II, III **1-6 credits**

CHEM 296, CHEM 396, CHEM 496
Independent Study in Chemistry I, II, III **1-6 credits**

CHEM 499 Honors Internship in Chemistry **1-6 credits**

See BIOL 499 for course description.

CRMJ – CRIMINAL JUSTICE

CRMJ 150 Introduction To Criminal Justice **3 credits**

Provides a general overview of the criminal justice system, including history, current role, developments, and constitutional implications of law enforcement; describes the major agencies: police, prosecution, courts, corrections and interdependence.

CRMJ 151 Evolution of Policing **3 credits**

Comprehensive study of the evolution of policing in America including the political era, the Professional era and the Community and post-911 eras, through to the contemporary policing era.

CRMJ 201 Constitutional Law for Law Enforcement **3 credits**

The practical application of U.S. Supreme Court decisions on local, state and federal law enforcement. Particular emphasis is given to the First, Second, Fourth, Fifth, Sixth and Eighth amendments. Prerequisite: CRMJ 150 and CRMJ 151.

CRMJ 220 Professional Communications in Criminal Justice **3 credits**

This is a report writing and presentation class geared to police, legal personnel, correctional officers and other criminal justice personnel who must write effective reports and affidavits for the court, testify before the court, and complete legal forms (writing-in-the-discipline course). Prerequisite: CRMJ 150.

CRMJ 230 Ethics and Professional Responsibility **3 credits**

This is a course in applied ethics for those interested in criminal justice. This course explains the criteria necessary for an ethical issue as well as a discussion of ethical systems. The class focuses on ethics for police, courtroom personnel and correctional officers as it applies to their day-to-day operations, and deals with specialized ethical issues involved in the criminal justice community. Prerequisite: CRMJ 150.

CRMJ 250 Criminal Law and Procedure **3 credits**

Is a comprehensive study of sources, distinctions, and limitations relating to substantive and procedural criminal law; the development of the criminal law and procedure in the United States; the principles of criminal liability; the various crimes and their elements; the criteria considered in determining capacity and defenses. Emphasis is on the role of criminal justice personnel in the criminal law process as they perform their duties within the prescribed procedural framework. Prerequisite: CRMJ 150.

CRMJ 251 Criminology **3 credits**

Surveys the major trends and issues in law enforcement, including the historical and contemporary development of the police role in society. Analyzes police behavior and attitudes affecting their relationship with the community they serve, as well as the legal framework within which they operate. Prerequisite: CRMJ 150.

CRMJ 254 Juvenile Justice **3 credits**

Examines the history and philosophy of juvenile justice in America and the impact of present societal reforms on the

juvenile system. A wide array of theoretical positions will be system operates will highlight the differences in adult and juvenile law. Prerequisite: CRMJ 150.

CRMJ 261 The Courts and Criminal Trial **3 credits**

Examines the operation of state and federal courts, while examining the origin and development of the court system. Emphasis is on the role and administration of the court in criminal justice. Prerequisite: CRMJ 150.

CRMJ 262 Corrections, Probation & Parole **3 credits**

Introduction into the history and use of jails, prisons, pre-trial release, corrections, community corrections programs, including those judged to be at higher risk to re-offend and thus have greater treatment needs. Prerequisite: CRMJ 150.

CRMJ 281 Community-Based Corrections **3 credits**

Examines the history, theory, and practice of corrections in the community, with emphasis on diversion probation, parole, halfway houses, and other alternatives to incarceration. Prerequisite: Upper division status.

CRMJ 290 History of Organized Crime **3 credits**

Explores the origin of traditional organized crime including the Mafia, Triads, Yakusa and drug cartels in the United States over the past 80 plus years. The student will analyze the roots and organizational structure of these organizations, with particular focus on one specific organized crime group. Prerequisite: CRMJ 150.

CRMJ 194,CRMJ 294 Special Topics **3 credits**

CRMJ 304 Competitive Exams & Hiring Process **3 credits**

Positions in law enforcement require the taking of tests for placement and extensive oral exams and interviews. This course will require the student to take multiple mock federal and state law enforcement competitive exams; participate in mock interviews and complete standard applications in order to equip the student with appropriate test taking and interview skills. Prerequisites: ENGL 101, MATH 150, CRMJ 150, CRMJ 220 and Senior Standing.

CRMJ 305 Joint Task Force **3 credits**

Examines the concept of task force investigations and their strengths and weaknesses. It explains the evolution of the task force concept and the underlying operations of task force operations. Prerequisite: CRMJ 150.

CRMJ 313 Sex Crimes Investigation **3 credits**

Comprehensive study of issues and trends to violence against women by examining a collection of twenty-three classic, groundbreaking papers that have shaped the field of violence against women. The major themes will be: Sexual Violence Against Women; Physical Violence Against Women; and Perpetrators of Violence Against Women. Each theme will seek a meaningful and thought provoking dialog concerning how violence impacts women and how perpetrators are processed through the criminal justice system. Prerequisite: CRMJ 150.

CRMJ 315 Quantitative Methods **3 credits**

Introduction to mathematical and statistical tools used routinely by criminal justice and law enforcement professionals to analyze crime data. Statistical methods for data analysis will be a focus. Computer analysis using SPSS will enable students to analyze and plot data; understand the rules of probability and conditional probability, distributions, random variables, sampling, confidence interval estimates, hypothesis testing, regression analysis and correlation. Prerequisite: MATH 150.

CRMJ 330 Risk Assessment & Investigation **3 credits**

The student will become familiar with the National Threat Initiative for local or national response. The course will also cover an overview of investigative techniques as they apply to terrorism including technical investigative techniques.

CRMJ 351 Research Methods and Design **3 credits**

Provides an introduction and overview of the methods, designs, and measurements used in criminal justice and criminology research. Students will learn about the application of theoretical frameworks, research designs, data collection, sampling procedures and the methods used to measure crime. The evaluation of the quality of research performed by others will be a focus of the course. Students will be introduced to computer data analysis using SPSS. Students who intend to go to graduate school should take this course. Prerequisites: MATH 150, CRMJ 150 and Junior Standing.

CRMJ 352 Fraud Investigations **3 credits**

This course studies the multi-faceted nature of white-collar criminal activity. It will discuss the numerous varieties of

this activity, as have been discovered over thirty plus years of investigation by law enforcement at all levels in our society. The course focus is on the proliferation of political corruption concentrating on the structural features of certain institutions that facilitate malfeasance on the part of politicians and elected officials. Prerequisites: CRMJ 150 and CRMJ 361.

CRMJ 361 Criminal Evidence **3 credits**

Comprehensive study of the basic principles of criminal evidence for law enforcement personnel. Includes analysis of the rules of evidence as well as other evidentiary and procedural requirements, focusing upon problems of relevancy, impeachment, burden of proof, and presumptions. Reviews some constitutional guidelines affecting evidence collection and admissibility. Prerequisite: CRMJ 150 and Junior or Senior Standing.

CRMJ 362 Criminal Investigation **3 credits**

An introduction to the fundamentals of criminal investigation, crime scene search and recording, collection and preservation of evidence, scientific aids, modus operandi, sources of information, interviews and interrogation, follow-up, and case preparation. Prerequisite: CRMJ 150.

CRMJ 364 Money Laundering **3 credits**

This course covers money laundering as described in Title 18 USC §§ 1956, 1957 and refers to the process of concealing the source of illegally obtained money. The various sophisticated methods by which money may be laundered and the investigative methods utilized to uncover those schemes are identified. Prerequisites: CRMJ 150 and Junior Standing.

CRMJ 365 White Collar Crime **3 credits**

This course studies the multi-faceted nature of white-collar criminal activity. It will discuss the numerous varieties of this activity, as have been discovered over thirty plus years of investigation by law enforcement at all levels in our society. The course offers a broad understanding of not only the white-collar activities; but also their impact domestically and internationally on the economics of nations. Further, this course will explore not only white collar crime perpetrated by traditional criminal elements, but also by those who have been engaged in such activity that were heretofore believed to be respected corporations and businessmen. Finally, the course examines the proliferation of political corruption concentrating on the structural features of certain institutions that facilitate malfeasance on the part of politicians and elected officials.

CRMJ 395 Selected Topics in Criminal Justice **3 credits**

Provides the opportunity for the department to offer courses in areas of departmental major interest not covered by the regular courses.

CRMJ 400 Transnational Criminal Activities **3 credits**

Throughout most of its history, criminal justice has been principally preoccupied with crime and its control as a local phenomenon. In the 21st century, criminal justice has found it necessary to expand its concern to an international perspective. The influence of foreign subjects victimizing U.S citizens, as well as laundering illegally obtained funds in other countries, requires the student to understand the expansion of common or complex crimes transnational. This course will be writing intensive, and will require the student to incorporate previous lessons into their writings. Prerequisite: CRMJ 150 and Senior Standing. Senior Capstone.

CRMJ 403 Federal Law Enforcement **3 credits**

Comprehensive examination of criminal investigative responsibilities of the various federal law enforcement agencies in the United States. It will compare and contrast the different responsibilities and missions of the various agencies, with respect to existing criminal statutes. Prerequisite: CRMJ 150, CRMJ 151 and CRMJ 250.

CRMJ 404 International Criminal Law **3 credits**

Comprehensive study of issues regarding crimes against a body of international law designed to prohibit certain categories of conduct commonly viewed as serious atrocities and to make perpetrators of such conduct criminally accountable for their perpetration. Principally, it deals with genocide, war crimes, crimes against humanity, as well as the War of aggression. Prerequisite: Senior Standing.

CRMJ 411 Community Relations and Criminal Justice **3 credits**

A systematic treatment of the relationship between communities and law enforcement agencies with special emphasis on the effects of race and ethnicity on community/police relationships. Discussions of the impact of law enforcement agencies on community welfare, economic opportunities, criminal behavior, victimization, and different judicial processing. Analysis of the impact of assimilation and acculturation on criminal behavior, victimization, and criminal justice processes.

CRMJ 415 Women, Crime and Justice **3 credits**

This course will present contemporary issues and trends concerning women and their interactions with the criminal justice system. The major themes will be: Women as Professionals; Women as Offenders; and Women as Victims. Each of these themes will be treated within the context of police, courts, and corrections.

CRMJ 420 Re-thinking Rehabilitation and Re-entry **3 credits**

Addresses issues of how offenders should be rehabilitated and how can they be prepared for re-entry to their communities and society. These are very pressing questions that must be addressed. Prerequisites: CRMJ 150, CRMJ 262 and Senior Standing.

CRMJ 455 Internship in Criminal Justice **3 credits**

Internships offer planned programs of research, observation, study, and work in selected criminal justice agencies representing the major components of the system. Designed to supplement classroom study with constructive participation in the criminal justice system of communities, of the United States, and the Commonwealth of Pennsylvania. Prerequisites: CRMJ 150 and Junior or Senior Standing.

CRMJ 470 Criminal Profiling **3 credits**

This course covers the fundamental techniques of this behavioral and investigative tool that is intended to help investigators in order to identify unknown criminal subjects or offenders. Prerequisites: CRMJ 150, CRMJ 361 and Junior or Senior Standing.

CRMJ 472 Methods of Security **3 credits**

Relationships of private protective services with public law enforcement. Individuals, businesses, and governments providing prevention, protection, investigation and disaster recovery services. Protection of persons, property, and information. Methods of determining foreseeable of security incidents and adequacy of security programming in light of this foreseeable. Negligence proofing and concepts of legal liability. Discussion of industry standards and practices.

EE – ELECTRICAL ENGINEERING

EE 101 Circuit Analysis I **3 credits**

Introduction to electrical engineering through the study of elementary circuit analysis. Definition of electrical quantities including charge, current, voltage, and power. Physical and electrical properties of resistors, inductors, capacitors, and sources. Application of circuit laws and theorems to the analysis of resistive dc circuits. Nodal and mesh techniques for analysis of large-scale resistive networks. Ideal operational amplifiers and elementary op amp circuits. Time response of first- and second-order resistor-inductor-capacitor circuits. Prerequisite or co-requisite: MATH 190 (Calculus I).

EE 102 Circuit Analysis II **3 credits**

Continuation of EE 101. Review of complex numbers and complex algebra. Extension of dc circuit laws and theorems to the phasor analysis of sinusoidal steady-state circuits. Power calculations, power measurement, and power factor correction in single- and poly-phase systems. Resonance, network functions, frequency response, and Bode plotting. Linear and ideal transformers. Prerequisite: EE 101 (Circuit Analysis I); prerequisite or co-requisite: MATH 210 (Calculus II).

EE 103 Circuit Analysis Laboratory I **1 credit**

Introduction to circuit components, test equipment, and work practices in a typical low-voltage electrical laboratory. Prototyping and testing of circuits that demonstrate the principles studied in EE 101. Computer simulation of circuits using industry-standard software. Co-requisite: EE 101 (Circuit Analysis I).

EE 104 Circuit Analysis Laboratory II **1 credit**

Continuation of EE 103. Prototyping and testing of circuits that demonstrate the principles studied in EE 102. Computer simulation of circuits using industry-standard software. Prerequisite: EE 103 (Circuit Analysis Laboratory I); co-requisite: EE 102 (Circuit Analysis II).

EE 221 Electronics I **4 credits**

Introduction to semiconductor electronics. Physical and electrical characteristics of diodes, bipolar junction transistors, and field-effect transistors. Analysis and design of common electronic circuits such as rectifiers, limiters, switches, and amplifiers. Introduction to power devices and power amplifiers. Laboratory includes prototyping, testing, and computer

simulation of circuits that demonstrate the principles studied in the lecture. Prerequisites: EE 102 (Circuit Analysis II), EE 104 (Circuit Analysis Laboratory II).

EE 222 Electronics II **4 credits**

Continuation of EE 221. Analysis of differential and multi-stage amplifiers, current sources, and active loads. Characteristics and applications of analog integrated circuits with emphasis on the design of operational amplifier circuits. Use of feedback in discrete and integrated circuit amplifiers. Introduction to digital logic and MOSFET logic gates. Laboratory includes prototyping, testing, and computer simulation of circuits that demonstrate the principles studied in the lecture. Prerequisite: EE 221 (Electronics I).

EE 194, EE 294 Special Topics **3 credits**

EE 331 Electrical Power I **4 credits**

Introduction to electromechanical devices and energy conversion. Analysis of magnetic materials and systems. Electromagnetic induction and the production of electromagnetic torque. Physical and electrical characteristics of transformers, three-phase induction motors, synchronous motors and generators, and dc motors and generators. Use of equivalent circuit models, standard formulas, and graphical techniques to predict machine performance. Laboratory includes measurements on typical machines and systems and instruction in electrical safety practices. Prerequisite: EE 102 (Circuit Analysis II).

EE 332 Electrical Power II **4 credits**

Continuation of EE 331. Physical and electrical characteristics of single-phase induction motors and other rotating machines. Use of equivalent circuit models, standard formulas, and graphical techniques to predict machine performance. Introduction to power system analysis including system models, per-unit calculations, power flows, and symmetrical and unsymmetrical fault calculations. Laboratory includes computer simulations, measurements on typical machines and systems, and instruction in electrical safety practices. Prerequisite: EE 331 (Electrical Power I).

EE 351 Digital Electronics I **3 credits**

Characteristics and applications of digital logic devices. Computation using the binary, octal, and hexadecimal number systems. Introduction to Boolean algebra. Combinational and sequential logic design using algebraic and graphical methods. Study of typical logic circuits including multiplexers, decoders, adders, counters, and shift registers. Laboratory includes implementation of digital systems using standard logic families and programmable devices. Prerequisites: EE 222 (Electronics II), ET 204 (Programming for Engineering Technology).

EE 352 Microprocessors I **3 credits**

Introduction to modern microprocessor devices and applications. Programming in assembly language. Hardware and software development to perform common tasks in data acquisition, control, and computation. Laboratory includes implementation of designs using industry-standard microcontrollers and programming practices. Prerequisite: EE 351 (Digital Electronics I).

EE 375 Signals and Systems **4 credits**

Introduction to the mathematical analysis of physical systems. Representation of linear systems in the time domain using differential and difference equations. Time-domain analysis using integration and recursion. Frequency-domain analysis using Fourier, Laplace, and z-transform techniques. Consideration of practical system limitations such as finite bandwidth and finite sampling rate. Laboratory includes computer simulations and prototyping of typical systems. Prerequisites: MATH 230 (Linear Algebra I), MATH 310 (Differential Equations).

EE 385, EE 485 Electrical Engineering Seminar **0 credits**

Taken only upon recommendation of their faculty advisors, this course is intended for students who are transferring into the Electrical Engineering program. Specialized topics studied in this course together with their previous coursework will provide transfer students with advanced standing in the program and attainment of the prescribed student outcomes. The topics and format of this course are determined individually for each student by agreement of the faculty advisor, the course instructor, and the student. This course may be repeated for credit as needed.

EE 415 Electromagnetics **4 credits**

Introduction to classical electromagnetics. Three-dimensional vectors and coordinate systems. Description of electric, magnetic, and electromagnetic fields using Maxwell's equations. Theory and applications of transmission lines. Propagation of guided and unguided waves. Introduction to antennas. Laboratory includes the use of vector network analysis and S parameters in microwave measurement and design. Prerequisites: EE 222 (Electronics II), MATH 300 (Calculus III).

EE 425 Power Electronics **4 credits**

Characteristics and applications of power semiconductors including diodes, , BJTs, IGBTs, and FETs. Analysis of rectifiers, converters, and inverters as the fundamental elements of power thyristors electronic systems. Design of switching power supplies and motor controllers. Consideration of power quality issues such as harmonic generation in a power electronic environment. Laboratory includes computer simulations and prototyping of typical circuits studied in the lecture. Prerequisites: EE 222 (Electronics II), EE 332 (Electrical Power II).

EE 435 Electrical Distribution Systems **4 credits**

Design of electrical power distribution systems for residential, commercial, and industrial occupancies in accordance with the National Electrical Code. Load studies to determine power requirements. Specification and layout of transformers, service equipment, feeders, panelboards, and branch circuits. Fault analysis to coordinate overcurrent protection throughout a system. Introduction to illumination engineering and design of interior and exterior lighting. Laboratory includes study of the National Electrical Code and completion of design projects to meet realistic criteria and constraints. Prerequisite: EE 332 (Electrical Power II).

EE 445 Control Systems **4 credits**

Design of feedback control systems using both continuous- and discrete-time representations. Laplace and z transform techniques for computing time and frequency responses. Stability tests and the use of compensation to achieve stability and improve system performance. Laboratory includes computer simulations and the implementation of a complete software-based control system. Prerequisite: EE 375 (Signals and Systems).

EE 455 Digital Electronics II **4 credits**

Advanced topics in digital design. Definition of digital systems using schematic capture, hardware description languages, and computer-aided engineering software. Implementation of digital logic using modern components such as complex programmable logic devices (CPLDs) and field-programmable gate arrays (FPGAs). Use of embedded soft-core processors to run microcontroller code within a programmable logic device. Laboratory includes the design, simulation, and hardware implementation of typical systems. Prerequisite: EE 352 (Microprocessors I).

EE 465 Communication Electronics **4 credits**

Analysis and design of communication circuits including tuned matching networks, small-signal amplifiers, large-signal amplifiers, oscillators, mixers, modulators, and demodulators. Theory of amplitude, frequency, and phase modulation. Transmitter and receiver topologies. Effects of noise in communication systems. Laboratory includes the use of radio-frequency instruments such as spectrum analyzers and vector network analyzers to design and test circuits studied in the lecture. Prerequisites: EE 222 (Electronics II), EE 375 (Signals and Systems).

EE 467 Digital Signal Processing **4 credits**

Conversion of analog signals to digital form and reconstruction of analog signals from their digital form. Representation of signals and systems in the discrete-time and z-transform domains. Design of digital filters using standard topologies and algorithms. Additional applications of digital signal processing such as waveform generators and modulators. Computational considerations in implementing practical systems. Noise effects and recovery of noise-corrupted signals. Laboratory includes simulation, design, and hardware implementation of representative digital systems. Prerequisites: EE 375 (Signals and Systems), EE 455 (Digital Electronics II).

EET – ELECTRICAL ENGINEERING TECHNOLOGY

EET 102 Direct Current Circuits **3 credits**

Definitions of charge, current, voltage, power, and resistance. Ohm's and Kirchhoff's laws. Analysis of dc networks including nodal and mesh techniques and use of network theorems. Introduction to ideal operational amplifiers. Properties of linear capacitors and inductors. Time response of first-order resistor-capacitor and resistor-inductor circuits. Prerequisite or co-requisite: MATH 180 (College Algebra).

EET 103 Alternating Current Circuits **3 credits**

Introduction to complex numbers and complex algebra. Phasor analysis of sinusoidal steady-state networks including nodal and mesh techniques and use of network theorems. Power calculations, power measurement, and power factor correction in ac networks. Resonance, network functions, and frequency response. Polyphase systems. Linear transformers. Prerequisites: EET 102 (Direct Current Circuits), MATH 185 (Trigonometry), NSET 101 (Introduction to the Natural Sciences and Engineering Technology).

EET 104 Direct Current Circuits Laboratory 1 credit

Laboratory study of direct current circuits. Prerequisite or co-requisite: EET 102 (Direct Current Circuits).

EET 105 Alternating Current Circuits Laboratory 1 credit

Laboratory study of alternating current circuits. Prerequisite: EET 104 (Direct Current Circuits Laboratory). Co-requisite: EET 103 (Alternating Current Circuits).

EET 200 Basic Electronics 4 credits

Introduction to semiconductor devices including diodes, bipolar junction transistors, and field-effect transistors. Analysis and design of rectifiers, switches, and amplifiers. Small-signal characteristics of discrete transistor amplifiers including gain and frequency response. Introduction to power devices and power amplifiers. Laboratory includes experiments and computer simulations. Prerequisite: EET 103 (Alternating Current Circuits). Co-requisite: MATH 190 (Calculus I).

EET 201 Electronic Circuits 4 credits

Continuation of EET 200. Analysis and design of operational amplifier circuits including amplifiers, filters, and oscillators. Applications of analog integrated circuits in communication, instrumentation, and data conversion. Study of thyristors and regulators for power conversion and control. Introduction to photovoltaic devices. Laboratory includes experiments and computer simulations. Prerequisite: EET 200 (Basic Electronics).

EET 215 Digital Electronics I 3 credits

Electrical characteristics of digital logic devices. Number systems and Boolean algebra. Combinational and sequential logic design using standard techniques such as Karnaugh maps. Study of common logic circuits including multiplexers, decoders, adders, flip-flops, counters, and shift registers. Implementation of digital systems using standard logic families and programmable devices. Prerequisites: EET 201 (Electronic Circuits), ET 204 (Programming for Engineering Technology).

EET 216 Microprocessors I 3 credits

Introduction to modern microprocessor architecture, characteristics, and applications. Programming in assembly language. Hardware and software development to perform common tasks in data acquisition, control, and computation. Implementation of designs using industry-standard components and practices. Prerequisite: EET 215 (Digital Electronics I).

EET 305 Communication Electronics 4 credits

Analysis and design of communication circuits including tuned matching networks, small-signal amplifiers, large-signal amplifiers and oscillators, mixers, modulators, and demodulators. Introduction to Fourier transform analysis. Theory of amplitude, frequency, and phase modulation. Transmitter and receiver topologies. Effects of noise in communication systems. Prerequisites: EET 201 (Electronic Circuits), MATH 210 (Calculus II).

EET 327 Electrical Power Technology I 3 credits

Electromagnetic principles of rotating machines. Characteristics and applications of dc generators, dc motors, and ac generators. Electronic control of dc motors. Methods of power generation including economics and environmental effects. Study of modern topics in generation, motor control, and energy using the current literature. Prerequisites: EET 103 (Alternating Current Circuits), ET 204 (Programming for Engineering Technology)

EET 328 Electrical Power Technology II 3 credits

Continuation of EET 327. Transformers, three-phase induction and synchronous motors, and single-phase motors. Electronic control of ac motors. Basics of electrical power transmission and an introduction to the smart grid, micro grids, and dc transmission. Study of modern topics in power transmission and motor controls using the current literature. Prerequisite: EET 327 (Electrical Power Technology I).

EET 348 Control Systems I 4 credits

Introduction to feedback control systems. Time-domain and Laplace transform analysis of linear systems, including time response, frequency response, stability, and compensation. Transducers, actuators, and electronic circuits used in process control. Use of PCs for data acquisition and control. Software simulation of control systems. Prerequisites: MATH 310 (Differential Equations), EET 201 (Electronic Circuits).

EET 401 Field Theory and Microwaves 4 credits

Introduction to classical electromagnetics. Vectors and coordinate systems. Electric, magnetic, and electromagnetic fields. Maxwell's equations. Theory and applications of transmission lines. Propagation of guided and unguided waves.

Introduction to antennas. Use of vector network analysis and S parameters in microwave measurement and design. Prerequisites: EET 201 (Electronic Circuits), MATH 210 (Calculus II)

EET 415 Digital Electronics II **3 credits**

Advanced techniques for digital system design including hardware description languages and computer-aided engineering software. Implementation of digital logic using modern components such as complex programmable logic devices and field-programmable gate arrays. Prerequisite: EET 216 (Microprocessors I).

EET 416 Microprocessors II **3 credits**

Specification, design, and construction of a microprocessor-based project. Use of modern development tools such as computer-aided engineering software and logic analyzers. Prerequisite: EET 415 (Digital Electronics II).

EET 421 Electrical Power Systems **3 credits**

Analysis of electrical power systems including models, per-unit calculations, power flows, and symmetrical and unsymmetrical fault calculations using both hand and computer computation. Introduction to the smart grid, micro grids, and dc transmission. Study of modern topics in power systems using the current literature. Prerequisites: EET 328 (Electrical Power Technology I), MATH 230 (Linear Algebra I).

EET 426 Commercial Electrical Design **3 credits**

Electrical design procedures for commercial and industrial occupancies including specification and protection of feeders and branch circuits based on the National Electrical Code. Lighting techniques, harmonic effects, on-site power generation, and energy efficiency. Study of modern topics in electrical design using the current literature. Prerequisite: EET 328 (Electrical Power Technology I).

EET 448 Control Systems II **4 credits**

Continuation of EET 348. Advanced techniques for the analysis and design of feedback control systems using both continuous- and discrete-time representations. Investigation of typical systems through computer simulation and hardware implementation. Prerequisite: EET 348 (Control Systems I).

EET 194, EET 294 Special Topics **3 credits**

EET 295, EET 395, EET 495
Special Topics in Electrical Engineering Technology I, II, III **1-6 credits**

EET 296, EET 396, EET 496 Independent Study in Electrical
Engineering Technology I, II, III **1-6 credits**

EET 499 Honors Internship in Electrical Engineering Technology **1-6 credits**

See BIOL 499 for course description.

EGR – ENGINEERING

EGR 101 Introduction to Engineering **3 credits**

An introduction to the professions in engineering including fundamentals and ethical practices. Software relevant to engineering fields will be utilized to solve practical problems. Additionally, a research project and oral presentation related to these fields will be required.

EGR 401 Engineering Design I **3 credits**

Consideration of legal, ethical, social, and economic factors in engineering practice. Use of effective oral and written communication techniques in the workplace. Application of project management tools including proposals, progress reports, and design reviews. Student teams propose design projects that will be completed in EGR 402; by the end of the term, each team's proposal must be accepted by the project sponsor. Prerequisite: 12 credits of major courses at the 300 or 400 level.

EGR 402 Engineering Design II **3 credits**

Continuation of EGR 401. Student teams complete the projects proposed in EGR 401 in a collaborative, professional atmosphere using management tools such as engineering notebooks, progress reports, and design reviews. By the end of

the term, each team must document and deliver the product described in its proposal. Prerequisite: EGR 401 (Engineering Design I).

ET – ENGINEERING TECHNOLOGY

ET 204 Programming for Engineering Technology 3 credits

Introduction to a modern high-level computer language. Discussion of data types, program structures, common programming tasks, and data storage techniques. Application to representative problems in engineering technology including rudimentary numerical methods and data analysis. Prerequisite: NSET 101 (Introduction to the Natural Sciences and Engineering Technology). Co-requisite: MATH 190 (Calculus I).

ET 405 Fundamentals of Engineering Examination I 0 credits

Benefits, requirements, and procedures for becoming licensed as a professional engineer. Introduction to the Fundamentals of Engineering examination as the first step in professional licensure. Students must register for the F.E. examination as a requirement of this course. Prerequisite: Eligibility to take the F.E. examination as determined by state regulations.

ET 406 Fundamentals of Engineering Examination II 0 credits

Strategies and hints for taking the Fundamentals of Engineering examination. Students must take the F.E. examination as a requirement of this course. Prerequisite: ET 405.

ET 407 Professional Problems in Engineering Technology 3 credits

Consideration of the technical, economic, ethical, and social issues surrounding engineering design. Students working in teams will plan, design, and complete a faculty-approved project that integrates technical and non-technical skills. The course will include case studies, on-line learning experiences, and both written and oral presentations. Prerequisites: 12 credits of Department Major Requirements at the 300 and 400 level.

ETGR – ENGINEERING TECHNOLOGY GRAPHICS

ETGR 205 Engineering Technology Graphics 3 credits

Introduction to graphical representation using hand drawing and computer-aided drafting. Orthographic projection, dimensioning, sketching, and visualization. Use of layers, line types, blocks, and scale as they relate to orthographic projection.

ENGL – ENGLISH

ENGL 101 College Composition 3 credits

Students will write argument-based assignments leading to an independently researched project based on academic and professional goals. Students will be required to 1.) find and integrate a variety of sources, 2.) read and analyze these sources, 3.) develop strong thesis statements that reflect perspectives on topics or issues, and 4.) construct persuasive arguments that engage with the viewpoints of experts and commentators. As the term progresses, students will have the opportunity to re-think or revise the ideas and perspectives they explored in earlier writing assignments by engaging with peer feedback and revising earlier drafts. Placement recommendations will require students to take ENGL 101 as a three-credit course OR in conjunction with an additional credit of lab or studio instruction. Students who earn F or NP grades in ENGL 101 will be required to re-take the course in conjunction with a one-credit Writing Studio course.

ENGL 120 Introduction to Literary Studies 3 credits

ENGL 120 will introduce students to the scholarly study of literature. Students will learn to read and analyze at least three genres, such as the novel, the drama, and the short story, with attention to the different techniques and forms that writers use to create meaning. Students will also master the critical vocabulary of literary studies, and will learn to produce strong, persuasive close readings of literary texts. Prerequisite: ENGL 101.

ENGL 146 Writing Lab 1 credit

This one-hour course is designed to provide supplemental instruction in writing and to support the learning

objectives of ENGL 101, with particular attention to the writing process and grammar, spelling, and mechanics. This course will be graded on a Pass/No Credit basis. Co-requisite: ENGL 101.

ENGL 147, 148, 149 Writing Studio I, II, III **1 credit**

This one-credit course is designed to provide supplemental instruction in writing through collaborative activities, conferences, and guided work time and may be taken in conjunction with ENGL 101: College Composition or any Writing Intensive (WI)-designated course. Writing Studio will be graded on a Pass/No Credit basis. Co-requisite: ENGL 101 or any Writing Intensive (WI) course.

ENGL 200 Creative Writing **3 credits**

Students will write in multiple genres, including but not limited to poetry, fiction, and creative nonfiction, among others. Class experiences will include workshop, peer review, revision, reading work aloud, and compiling a portfolio of creative work. Pre-requisite: ENGL 101 or its equivalent.

ENGL 250 World Literature: Drama, Poetry, Epic **3 credits**

ENGL 250 will introduce students to the fundamentals of literary studies, including terms, definitions, and research methodologies. Students will learn what it means to produce a close reading, what different interpretative perspectives can offer us as we read a text, how to distinguish between primary and secondary sources, and how to research and develop a literary analysis. Prerequisite: ENGL 101.

ENGL 251 World Literature: Novels **3 credits**

ENGL 251 will introduce students to the fundamentals of literary studies, including terms, definitions, and research methodologies. Students will learn what it means to produce a close reading, what different interpretative perspectives can offer us as we read a text, how to distinguish between primary and secondary sources, and how to research and develop a literary analysis. Prerequisite: ENGL 101.

ENGL 252 The Art of Creative Nonfiction **3 credits**

A course covering a broad range of prose including essay, memoir, biography, autobiography, and expository writing, as well as some fiction and short story as it has been practiced in western culture over the past five hundred years. The course will cover historic, generic, formal, and thematic aspects of prose. Students will be expected to analyze and perform close readings of individual prose texts examining content, technical aspects, and context, and to share those interpretations both verbally and in writing, as well as to create imaginative text of their own authorship (personal essay, memoir, etc.) that reflects the conventions of the genre. Prerequisite: ENGL 101 or equivalent. Dual listed as COPA 252.

ENGL 253 The Art of Poetry **3 credits**

A course covering a broad range of lyric poetry as it has been practiced in western culture over the past five hundred years. The course will cover historic, generic, formal, and thematic aspects of poetry. Students will be expected to analyze and perform close readings of individual poems including content, technical aspects, and context, and to share those interpretations both verbally and in writing, as well as to create imaginative text of their own authorship (poetry) that reflects the conventions of the genre of poetry. Prerequisite: ENGL 101 or equivalent. Dual listed as COPA 253.

ENGL 254 The Art of the Short Story **3 credits**

A course covering the development of the short story as it has been practiced in Western culture over the past two hundred years. The course will cover historic, generic, formal, and thematic aspects of the short story. Students will be expected to analyze and perform close readings of individual texts, examining content, technical aspects, and context, and to share those interpretations both verbally and in writing. Prerequisite: ENGL 101 or equivalent. Dual listed as COPA 254.

ENGL 255 Theoretical Approaches to the Study of Literature **3 credits**

A multi-genre and/or multicultural course that examines both primary and secondary sources in any one of a number of traditional avenues of inquiry within Literary Studies. Approaches might have a critical basis (such as race, sexuality, class, religion, ethnicity, or gender) or a contextual basis (emphasizing a particular genre, movement, or region). Prerequisites: ENGL 101 or equivalent.

ENGL 260 British Literature I **3 credits**

A study of major literary periods and genres in England up through the 18th century. Prerequisite: ENGL 120 or an ENGL 200-level course.

ENGL 261 British Literature II **3 credits**

A study of the major literary periods (Romantic, Victorian, Modernist, and Contemporary) and genres from 1789 to the present. Prerequisite: ENGL 120 or an ENGL 200-level course.

ENGL 262 American Literature I **3 credits**

A study of the major literary periods and genres from the colonial period through the American Renaissance. Prerequisite: ENGL 120 or an ENGL 200-level course.

ENGL 263 American Literature II **3 credits**

A study of the major literary periods and genres from the American Renaissance through Contemporary. Prerequisite: ENGL 120 or an ENGL 200-level course.

ENGL 300 Topics 1 **3 credits**

An intensive study of selected literary works organized by a single critical or theoretical method practiced within the field of literary studies. Topics may vary by semester. Prerequisite: ENGL 250+.

ENGL 301 Topics 2 **3 credits**

An intensive study of selected literary works that utilizes a topic or approach organized on a contextual basis (such as a particular genre, movement, or region, or thematic principle). Topics may vary by semester. Prerequisite: ENGL 250+.

ENGL 302 Linguistics **3 credits**

Provides students with an introduction to broad areas of linguistic theory and inquiry, including an introduction to the study of morphology, semantics, syntax, phonetics, phonology, and historical linguistics. It also includes an introduction to areas included within the disciplines of psycholinguistics and sociolinguistics. Dual listed as MLNG 302.

ENGL 305 Authors 1 **3 credits**

An intensive study of the works of a single major author. Prerequisite: ENGL 250+.

ENGL 306 Authors 2 **3 credits**

An intensive study of the works of two or three major authors examined in the context of one another's work. Prerequisite: ENGL 250+.

ENGL 315 Language & Theory 1 **3 credits**

An intensive study focusing on a specific approach to understanding language as a subject in itself, including its nature, structure, function, and development. Prerequisite: ENGL 250+ or permission.

ENGL 316 Language & Theory 2 **3 credits**

An intensive study of theoretical frameworks for understanding the interaction of language and meaning, especially across cultural contexts. Some courses may be cross-listed. Prerequisite: ENGL 250+ or permission.

ENGL 335 History of the English Language **3 credits**

English from its Teutonic beginnings to the present day. Changes in vocabulary, syntax, pronunciation and style. Prerequisites: ENGL 250 or ENGL 251.

ENGL 338 Literary Criticism **3 credits**

A study of the basic and recurrent issues of literary theory and practice from Aristotle to the present. Writing-in-discipline class. Prerequisites: ENGL 250 or ENGL 251.

ENGL 340 Periods & Traditions 1 **3 credits**

An intensive study of a single period or tradition in British literature before 1800. Prerequisite: ENGL 250+.

ENGL 341 Periods & Traditions 2 **3 credits**

An intensive study of a single period or tradition in American literature before 1860. Prerequisite: ENGL 250+.

ENGL 342 Periods & Traditions 3 **3 credits**

An intensive study of a single period or tradition in British literature between 1800 and 1945. Prerequisite: ENGL 250+.

ENGL 343 Periods & Traditions 4 **3 credits**

An intensive study of a single period or tradition in American literature from 1860-1945. Prerequisite: ENGL 250+.

ENGL 344 Periods & Traditions 5 **3 credits**

An intensive study of a single period or tradition in literature after 1945. Prerequisite: ENGL 250+.

ENGL 365 Creative Nonfiction Workshop 1 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in creative nonfiction. Students will also master the ethics and practices of workshopping and responding to writing by their peers. Portfolios will be compiled by each student in the workshop. Prerequisite: ENGL 200

ENGL 366 Fiction Workshop 1 **3 credits**

This course will be a workshop environment, garnering a significant output of original creative work in fiction. Students will also master the ethics and practices of workshopping and responding to writing by their peers. Portfolios will be compiled by each student in the workshop. Prerequisite: ENGL 200

ENGL 367 Poetry Workshop 1 **3 credits**

This course will be a workshop environment, garnering a significant output of original creative work in poetry. Students will also master the ethics and practices of workshopping and responding to writing by their peers. Portfolios will be compiled by each student in the workshop. Prerequisite: ENGL 200

ENGL 399 Literary Arts Practicum **1-3 credits**

This course allows students to gain practical, hands-on experience by acting as creative work/research assistants on projects being done by LCS faculty or Point Park faculty members in other departments. The nature and scope of the work will be agreed upon by the student and faculty member, and approved by the Literature, Culture, & Society department. The goal of the practicum is to allow the student to broaden their knowledge on a particular subject, and to give them experience performing work at a professional level as well as meeting the deadlines given by their faculty supervisor. By engaging in the practicum experience, students will hone their critical thinking, reading, and writing skills, which are essential in today's competitive job market. An additional opportunity for practicum credit is to serve as a student ambassador for the department (e.g., manage social media, attend activities/events, mentor new majors, etc.). Students seeking approval for a student project practicum would be required to arrange to be supervised by an LCS faculty member. A 3-credit LCS student practicum requires generally 150 hours of work; however credits per hour would vary depending on the nature of the project.

ENGL 401 Creative Nonfiction Workshop 2 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in creative nonfiction. Emphasis will include the craft of the genre as students concentrate on consistency in voice, choices in narrative and psychic distance to events, negotiations of dramatization and reflection, ethos and verisimilitude of an increasingly hostile genre, and control of prose through consistent, evocative technique. The class will also address revision as an explicit aspect of the writing process. Prerequisite: ENGL 365.

ENGL 402 Creative Nonfiction Workshop 3 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in creative nonfiction. Emphasis will include the craft of the genre as students concentrate on consistency in voice, choices in narrative and psychic distance to events, negotiations of dramatization and reflection, ethos and verisimilitude of an increasingly hostile genre, and control of prose through consistent, evocative technique. The class will also require writing analytically about model texts. Prerequisite: ENGL 401.

ENGL 403 Fiction Workshop 2 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in fiction. Emphasis will include the craft of the genre as students concentrate on point of view, psychic distance, plot, dialogue, scene, exposition, narrative time frame, flashback, dialogue, and "form(s)" of the short story. The class will also address revision as an explicit aspect of the writing process. Prerequisite: ENGL 366.

ENGL 404 Fiction Workshop 3 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in fiction. Emphasis will include the craft of the genre as students concentrate on point of view, psychic distance, plot, dialogue, scene, exposi-

tion, narrative time frame, flashback, dialogue, and "form(s)" of the short story. The class will also require writing analytically about model texts. Prerequisite: ENGL 403.

ENGL 405 Poetry Workshop 2 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in poetry. Emphasis will include the craft of the genre as students concentrate on form, concrete language, image, poetic conventions, the line, metaphor, and the lyric tradition. The class will also address revision as an explicit aspect of the writing process. Prerequisite: ENGL 367.

ENGL 406 Poetry Workshop 3 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in poetry. Emphasis will include the craft, theory, and traditions of the genre. The class will also require students to respond analytically to model texts and/or essays on craft and prosody. Prerequisite: ENGL 405.

ENGL 411 Creative Nonfiction Workshop 4 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in creative nonfiction. Emphasis will include the craft and theory of the genre as students concentrate on consistency in voice, choices in narrative and psychic distance to events, negotiations of dramatization and exposition, ethos and verisimilitude of an increasingly hostile genre, and control of prose through consistent, evocative technique. Students will assemble a mini-collection of their work in creative nonfiction. Prerequisite: ENGL 402.

ENGL 412 Fiction Workshop 4 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in fiction. Emphasis will include the craft of the genre as students concentrate on point of view, psychic distance, plot, dialogue, scene, exposition, narrative time frame, flashback, dialogue, and "form(s)" of the short story. Students will assemble a mini-collection of their work in fiction. Prerequisite: ENGL 404]

ENGL 413 Poetry Workshop 4 **3 credits**

This course is a workshop environment, garnering a significant output of original creative work in poetry. Emphasis will include the craft, theory, and traditions of the genre. Students will assemble a mini-collection of their work in poetry. Prerequisite: ENGL 406.

ENGL 419 Senor Capstone for the English Major **3 credits**

As the capstone course for English Major, ENGL 419 will give students the opportunity to enhance their critical reading, analysis, and research skills through real-world application. Students in ENGL 419 will be asked to develop a 10-15 page scholarly or career-oriented project that engages with a relevant theme/topic in English Studies. This project will require student to enter into a critical conversation and engage meaningfully with secondary sources to develop original research or analysis of literary texts. As they develop their research, students will collaboratively organize and promote a campus-wide or community event/project, which will be determined each semester by the instructor. Assignments will include a portfolio or publicity-related documents/materials; weekly reflection or logs on the process of event/project planning; an abstract, annotated bibliography, a full draft, and revision of the 10-15 page project; and a formal presentation at the annual Literary Arts Symposium or another campus/community event. Prerequisite: Junior/Senior standing and at least four 300-level courses in ENGL.

ENGL 420 Senior Seminar: Craft and Critique **3 credits**

This course will explore the process and production of contemporary literature and criticism. The connections among the divergent areas of English studies will be explored through dialogue between students in both the ENGL and CW majors. Students will read contemporary texts in both literature and criticism, as well as, where appropriate, historic texts. Final projects will require a portfolio of significant scope and quality. Prerequisites: Senior Standing and at least 4 courses in ENGL at the 300+ level.

ENGL 194, ENGL 294 Special Topics **3 credits**

ENGL 195, 295, ENGL 395, ENGL 495
Special Topics in English or American Literature I, II, III **1-6 credits**

ENGL 296, ENGL 396, ENGL 496
Independent Study in English or American Literature I, II, III **1-6 credits**

EPE – ENTERTAINMENT PRODUCTION ENGINEERING

EPE 101 Introduction to Entertainment Production Engineering 1 credit

This course is the first of two courses that will introduce students to the live entertainment industry. Topics in this sequence of courses include navigating a professional load of freelance work and the associated labor, insurance and tax related constraints; introductions to the safety certifications most desired among workers in the field, including OSHA, Access, MEWP, and possibly others; and continual advisement on local gig work opportunities in the regional entertainment field. Regular guest presentations from the field of live entertainment will initiate the students' networking opportunities and exposure to the field. Prerequisite: enrollment in the EPE program.

EPE 102 Introduction to Entertainment Production Engineering II 1 credit

This course is the second of two courses that will introduce students to the live entertainment industry. Topics in this sequence of courses include navigating a professional load of freelance work and the associated labor, insurance and tax related constraints; introductions to the safety certifications most desired among workers in the field, including OSHA, Access, MEWP, Event Safety Alliance, and possibly others; and continual advisement on local gig work opportunities in the regional entertainment field. Regular guest presentations from the field of live entertainment will initiate the students' networking opportunities and exposure to the field. Prerequisite: enrollment in the EPE program.

FREN – FRENCH

FREN 101 Elementary French I 3 credits

An introduction to the French language and culture through conversation and basic grammar.

FREN 102 Elementary French II 3 credits

A continuation of FREN 101. Prerequisite: FREN 101.

FREN 201 Intermediate French I/Translation 3 credits

Reading and translation of various modern French texts. Prerequisite: FREN 102.

FREN 202 Intermediate French II/Conversation 3 credits

Development of conversational fluency and practical composition. Prerequisite: FREN 102.

FREN 215 French Culture 3 credits

The history and contemporary life of France and the French-speaking world. Provides an introduction to French culture through selected texts, current newspaper clippings and videos. Presented in English. Prerequisite: History 150 or permission of the instructor. Dual listed as HIST 215.

FREN 194, FREN 294 Special Topics 3 credits

FREN 295, FREN 395, FREN 495 Special Topics in French I, II, III 1-6 credits

FREN 296, FREN 396, FREN 496 Independent Study in French I, II, III 1-6 credits

FSCI – FORENSIC SCIENCE

FSCI 100 Development of the Death Investigation System 3 credits

A broad introduction of the development of the Death Investigation system from origin and inception through history to today's modern forensic practices. Overview of future job opportunities and career requirements. Inclusive of a comparative analysis of various post mortem examinations, including hospitals versus forensic. Descriptive and detailed workings of a functioning Medical Examiners (ME) office.

FSCI 194, FSCI 294 Special Topics 3 credits

FSCI 301 Accident/Suicide Death Investigation **3 credits**

An exploration of accidental deaths which includes motor vehicle, fire, drowning, overdose, industrial, medical misadventure and falls. Each type of death will be examined in detail relevant to the forensic investigation and the scope of the problem both locally and nationally. Students will be exposed to various methods of suicide, understand the patterns and reason along with the role of the forensic investigator. Special topics include Russian roulette and the significance of suicide notes.

FSCI 370 Forensic Evidence I **3 credits**

Overview of the role of criminalists from crime scene through laboratory analysis. This includes the collection of fingerprints, shoeprints, other impressions, ballistic and trace evidence (hair, fiber, glass, paint). This class will include the identification, collection, preservation, documentation and analysis of evidence. Several labs will provide practical hands-on experience as well as realistic exposure to evidence collection.

FSCI 371 Forensic Evidence II **3 credits**

An expansion and broadening of the concepts learned in Forensic Evidence I. Topics to include poisoning, DNA, blunt force trauma, stabbing, time-of-death determination, issues relating to firearms, natural and man-made disasters. Course includes an introduction to the role of forensic psychology, profiling and crime-mapping. Numerous labs will provide advanced practical hands-on experience as well as realistic exposure to evidence collection. Prerequisite: FSCI 370.

FSCI 401 Ethics in Forensic Science **3 credits**

This course will review the ethical issues specific to Forensic Science. Forensic science is used to convict the guilty and protect or exonerate the innocent. Ethics means following the principles of natural justice, in all the activities without fear or favor in a neutral way. As Forensic Science is used to put the clues of a particular occurrence into finding the truth, and experts render testimony in Courts of Law, it is most essential that the evidence should be on Ethical Standards, not to be misleading or false. The course is not meant to dictate actions, but to offer the tools and some direction for dealing with difficult situations related to Forensic Science.

FSCI 402 Natural Death Investigation **3 credits**

An examination of the natural death processes and how and why they are investigated. This class encompasses: cardiovascular, respiratory, central nervous system and others. In addition, the method for analyzing natural deaths from various sources, their meaning and impact on public health policies will be discussed. Topics include the use of this data for analysis of various programs. Prerequisites: BIOL 225, BIOL 226.

FSCI 455 Internship in Forensic Science **3 credits**

Students will work with their academic advisors and/or Instructors to identify either an accredited forensic laboratory or select criminal justice agencies with a Forensic evidence unit in the geographical area of their choosing. The Forensic Science Internship will provide the student with a professional work experience in an organizational environment. The internship is an extension of the curriculum and provides meaningful experience related to the student's area of concentration.

GCS – GLOBAL CULTURAL STUDIES

GCS/MLNG 205 Languages of the World **3 credits**

This course introduces students to theories of human language. Students will look at how and when speech and writing systems developed, including the history and evolution of various protolanguages. Students will study geographic, political, and sociocultural factors involved in language development and use. The course includes language recognition and analysis activities and directed application of theory.

GCS 215 Modernity, Colonialism and Capitalism **3 credits**

A broad historic and geographic consideration of the "globalizing" cultural forces of the Modern era that have affected nearly every living organism on the planet. Particular attention is given to the integrative dynamics of capitalism, colonialism, and (neo)imperialism. Prerequisite: GCS 175.

GCS 194, GCS 294 Special Topics **3 credits**

GCS/SOC 335 Revolutions **3 credits**

This course focuses on "revolutions" as globalizing forces in human history; it begins with a discussion of the European

Enlightenment and the Industrial Revolutions and proceeds through the American and French revolutions to the Bolshevik Revolution incorporating ancillary "revolutions" along the way, including discussions of some or all of the following: European colonial expansion, the Bolivarian liberation, Fordist production, consumerism, Viet Nam, post industrialization/post-Fordism, postmodernity, neoliberalism, etc. Prerequisite: INES 175.

HIST – HISTORY

HIST 201 Western Civilization I **3 credits**

This introductory survey course will familiarize students with major themes and historical events in the Western World from the Ancient World to the 1500s. Students will analyze the major forces, ideas and institutions which influenced the peoples of the world and look at the foundations of Western cultural expansion outward. In this course students will learn to think critically about historical events and how they are interpreted to better understand the relationship between historical events and contemporary interpretation of those events. Students will locate and evaluate primary and secondary texts and use them to write critically about history.

HIST 202 Western Civilization II **3 credits**

This introductory survey course will familiarize students with major themes and historical events in the Western World from the 1500s to the twenty-first century. Student will analyze the major forces, ideas and institutions which influenced the peoples of the world and examine the impact of Western cultural imperialism. In this course students will learn to think critically about historical events and how they are interpreted to better understand the relationship between historical events and contemporary interpretation of those events. Students will located and evaluate primary and secondary texts and use them to write critically about history.

HIST 203 History of the United States I **3 credits**

The historical, political and social movements of the United States and Pennsylvania from the Colonial period through 1865. The identification of individual rights and responsibilities as citizens is an integral part of this course. Prerequisite: History 150 or permission of the instructor.

HIST 204 History of the United States II **3 credits**

A continuation of HIST 203. The developments in the United States and Pennsylvania from 1865 to the present. Prerequisite: History 150 or permission of the instructor. Prerequisite: History 150 or permission of the instructor.

HIST 206 Foundations in Feminism: Women's History in the Western World **3 credits**

This course will introduce students to historical issues and questions about gender, power, and the role of women in modern society. This course will focus on American and European women in the 19th and 20th centuries to understand the debates about first, second, and third-wave feminism. Students will read and analyze how the roles of women, gender, and sexuality have been (mis)understood and continually redefined in the past two centuries. Students will be introduced to the process of writing through the lens of women and feminism. This course is Writing Intensive.

HIST 215 French Culture **3 credits**

The history and contemporary life of France and the French-speaking world. Provides an introduction to French culture through selected texts, current newspaper clippings and videos. Presented in English. Prerequisite: History 150 or permission of the instructor. Dual listed as FREN 215.

HIST 216 Spanish Culture **3 credits**

An introduction to the culture and history of Spain from the medieval era to the present day. Selected historical and literary texts are used to give a panoramic view of Spanish culture. Presented in English. Prerequisite: History 150 or permission of the instructor. Dual listed as SPAN 216.

HIST 220 History of American Music **3 credits**

In this course, students will learn about the history and development of American musical styles and the interaction that those styles had with American culture. Students will analyze both a variety of genres that evolved during the last one hundred and fifty years and the technology and venues that allowed those musical styles to permeate society. The role of the musician as the creator of new styles from vaudeville to Broadway and from blues to Rock 'n' Roll will dovetail with the audience and critics' response to those genres. During the semester, students will have the opportunity to listen to different styles of music, read history of how musical styles evolved, and read both musicians and critics analyses of their

works.

HIST 255 Military History **3 credits**

This survey course will introduce students to military history from ancient times through the end of the 20th century. Attention will be given to significant battles throughout time with a focus on key American wars. Students will analyze why nations go to war, discuss the role of changing technology in warfare, and assess the impact of war on populations. No prior knowledge of military history is required for this course.

HIST/SOC 263 World History: Central and South America **3 credits**

The development of the political, economic, social and cultural history of Latin America since the revolution for independence. Prerequisites: HIST 203, HIST 204 or permission.

HIST 311 Ancient History **3 credits**

Near Eastern civilization from the Neolithic period to the Persian Empire. Athenian and Roman power emphasized.

HIST 322 Renaissance and Reformation **3 credits**

The economic, social, cultural, political and religious impact of the Renaissance and Reformation in early modern history. Prerequisites: HIST 201, HIST 202 or permission.

HIST 327 Twentieth Century Europe **3 credits**

Europe from World War I to the present, including the most recent upheavals in Eastern Europe and the former Soviet Union. Prerequisites: HIST 201, HIST 202 or permission.

HIST 337 Adolf Hitler and Nazism **3 credits**

A study of both the long- and short-range forces which brought Hitler and Nazism to power in Germany. Examines the structure, style and operations of the Nazi system from its inception to its collapse. Prerequisite: HIST 201 or permission.

HIST 355 World War II **3 credits**

General course on the history of World War II. The course will address causes of the War, political and social dynamics of the War, issues related to the conduct of the War, political and social implications of the War, and the onset of the Cold War.

HIST 358 History of the Modern Middle East **3 credits**

This course will introduce students to the history of the Middle East. It will cover the life of Muhammad and the foundations of Islam. The majority of the course will focus on the 19th and early 20th century and the interaction between the Ottoman Empire and the European powers. This course will give students an opportunity to analyze the political misunderstandings that emerged in the region due to a lack of social and cultural awareness of difference.

HIST 362 American Decades: Topics **3 credits**

This course is an in-depth examination of key individuals, events, and cultural expressions in American history with a singular 10 year focus. Each decade will be researched for evidence of influence from the previous decade and responsibility for trends in the following decade. American political and social issues combined with individual stories will provide the historical narrative of the decade. This course will have a significant multicultural dimension.

HIST 372 History of the American Revolution **3 credits**

The causes and consequences of the American Revolution, including an examination of the Declaration of Independence, Articles of Confederation and the Constitution. Prerequisite: HIST 203 or permission.

HIST 373 Old South, Civil War and Reconstruction **3 credits**

America from the Compromise of 1850 to the end of Reconstruction. Emphasis on slavery as an institution and on the battles and leaders of the Civil War. Reconstruction and its impact on Black America. Prerequisites: HIST 203, HIST 204 or permission.

HIST 378 The United States Since World War I **3 credits**

A study of the period's major social, political, economic, diplomatic and military developments. Prerequisite: HIST 204 or permission.

HIST 382 History of Pennsylvania: Focus on Pittsburgh **3 credits**

A survey of the changing face of Pennsylvania from the colonial times to the present, with an emphasis on Pittsburgh and Western Pennsylvania. This course addresses historical, political, military, and economic developments in the Commonwealth. Writing-in-disciplines class. Prerequisite: History 150 or permission of the instructor.

HIST 412 Seminar in History **3 credits**

This course allows students to synthesize the work they've done in their majors through directed research, evaluation, and writing. Students will write a substantive academic paper which analyzes a specific research question that they will choose early in the semester. Students will read examples of different types of scholarship in their fields including academic abstracts, introductions to monographs, and academic journal articles as examples of the types of work they will be writing. Students will have the opportunity to revise and review peer's work to ground their own skills. Prerequisite: Senior standing.

HIST 418 The History of Money **3 credits**

Exchange relations have been part of human interactions for thousands of years. This course examines the history of such relations and the role of money as a medium of exchange. We will discuss the socio-cultural and the political-economic aspects of this history. Our journey will take us from the days of beads, shells and trinkets to present day uses of money in modern society.

HIST 455 History Practicum **3 credits**

This course is available to qualified students as a practicum within the University or in conjunction with an external agency. It prepares students for careers in their field by involving them in professional work under the supervision of faculty of staff members. This requires regular progress reports and a final paper. Prerequisite: Junior status; 3.0 GPA; consent of an instructor to act as a supervisor; acceptance by an agency if applicable.

HIST 194, HIST 294 Special Topics **3 credits**

HIST 295, HIST 395, HIST 495 Special Topics in History I, II, III **1-6 credits**

(See Department Requirements for a partial list of History courses offered as special topics.

HIST 296, HIST 396, HIST 496 Independent Study in History I, II, III **1-6 credits**

HUMA – HUMANITIES

HUMA 405 Interdisciplinary Studies Practicum **3 credits**

This course requires a semester-long commitment to a program, organization, or group in one of the student's chosen academic disciplines. Students contribute the critical thinking, communication, and research skills learned in one of their academic disciplines to help that organization reach the goals of their mission statement. Students work with the appointed faculty member on their project as well as the Interdisciplinary Studies faculty advisor. The work completed for the organization should be equivalent to 3 hours per week for a 15-week term. The course culminates in a student portfolio that showcases their work in the practicum (e.g., professional writing, presentations, PR materials, etc.). Also, students write a final reflective paper discussing their goals, objectives, challenges, recommendations, and an overall consideration of how the semester-long endeavor contributed to their educational experience. Students will be encouraged to share their work with the broader university community at the annual LCS symposium in the Spring.

HUMA 496 Senior Seminar Thesis Project **3 credits**

The Capstone Senior Thesis allows students to synthesize the work they have done in their majors through directed research, evaluation, and writing. Students will write a substantive academic paper that analyzes a specific research question they will choose early in the semester. Students will read examples of different types of scholarship in their fields, which may include academic abstracts and journal articles, historical documents, interviews, case law, government documents, statistical data, quantitative analyses, and numerous other primary and secondary sources for both research purposes and as examples of the types of work they will be writing. Students will work closely with a faculty mentor, including revision opportunity, as they build their paper and hone their research skills.

INES – INTERNATIONAL AND ENVIRONMENTAL STUDIES

INES 175 Introduction to International Studies **3 credits**

An introduction to the critical analysis of contemporary global cultural circumstances with special emphasis on developing an appreciation of the complex character of human cultural patterns the world over as well as a global perspective on the dynamics of power and privilege.

INES 210 Global Climate Politics **3 credits**

This course is an introduction to the politics concerning a warming planet—impacts, mitigations, and adaptations. Students will study ideas and theories that explain what is getting in the way of dealing with this existential threat. Effects of climate change around the world and political efforts to address these effects—from international cooperation to local struggles for climate justice—will also be studied.

INES 240 The South African Anti-Apartheid Movement **3 credits**

This course explores the political geographies of South Africa from the establishment of apartheid in 1948 to the present post-apartheid age. Students will examine geographic studies and primary source material to discover the ways in which various global processes have woven their way into South Africa's landscapes over the past seventy years, and in turn, how South Africa's political geographies have impacted global markets, politics, and practices. The first half of the course will take a detailed look at how the white-minority South African government geographically implemented and maintained apartheid according to a colonial logic of racial capitalism. The second half of the course will focus upon ways in which South Africans, Africans in neighboring states, and the broader international community organized to resist, and eventually end, apartheid. The course will thus serve as an historical case study of a relatively successful organizing and advocacy campaign for social justice.

INES 260 Strike! Boycott! Divest for Social Justice! **3 credits**

Students will learn how to use economic tools to advocate for various social justice causes. The course will focus on how strategies such as shareholder activism, boycott campaigns, divestiture, and worker solidarity campaigns, among other tools, can put economic pressure on companies and governments to change their policies. A combination of historical case studies and hypothetical scenarios will illustrate how these tools work on the ground.

INES 300 Gentrification **3 credits**

This course explores the ongoing process of gentrification by which much of the landscape of late Capitalism is being refashioned. The course will address various approaches to the describing/explaining gentrification, encompassing a wider-range of both production-side and consumption-side analyses, as well as hybrid approaches; in addition, the course will attend to the class-based, gendered, racial, and lifestyle aspects of varying forms of gentrification.

INES 305 Cocaine, Coffee, Chocolate **3 credits**

This seminar is an interdisciplinary course devoted to the intensive study of commodity chain analysis, with a focus on select commodities (e.g., Cocaine, Coffee, and Chocolate). Students will develop an understanding of how to investigate the social and ecological relations embedded in things that we as a society use and consume and throw away. Student learning will culminate in a research proposal and/or paper. Topics may vary by semester.

INES 325 Global Political Economy **3 credits**

This course will survey and investigate the sociocultural dimensions of global political economy, as a comprehensive and systematic approach to understanding of the roots of many of the world's dynamics of inequality. In the process we will interrogate the , analytically distinct but practically intertwined , historical processes associated with the Enlightenment, (European) colonialism, and capitalism, as well as their profound and lasting repercussions on the contemporary world. **Prerequisite:** SJS 150 or SJS 175

INES 340 Global Political Ecology **3 credits**

A study of the relationship of humans to the environments they inhabit with special attention paid to the political-economic structures that inform those relationships; of particular interest will be the character of capitalism and the extent to which it is implicated in the ongoing environmental change on local and global scales. Prerequisite: INES 175

INES 390 Study Abroad I **3 credits**

INES 426 International and Environmental Studies Thesis Capstone **3 credits**

The senior capstone thesis for International and Environmental (INES) majors allows students to conduct original re-

search and write a thesis on a topic in International Studies and/or Environmental Studies. Under the guidance of a faculty supervisor, students will collect and analyze data and will write a thesis in the format of a peer-reviewed journal article. Upon completion of a full draft of the thesis, students will orally present their research to the university community.

INTL – INTELLIGENCE AND NATIONAL SECURITY

INTL 101 Introduction to Intelligence **3 credits**

The origins of collecting, assimilating, and using intelligence from the Spartans through the present will be discussed in detail in order to lay a foundation for today's methods and analysis of intelligence.

INTL 102 Intelligence Tradecraft Techniques **3 credits**

This course will present information on the degree of planning and the preparation methods used by terrorists prior to an attack. Emphasis is on the planning and preparation stages of the attack, the time when terrorists are most susceptible to law enforcement detection. Included in this course will be an extensive familiarization of the jargon utilized by the intelligence community and their research methods.

INTL 103 International Terrorism **3 credits**

This course will focus on the origins of terrorism by identifying know organizations, their perceived structure, and their degree of operational capacity. Inclusive in this course will be the Method of Operation (MO) an the tell-tale signs to look for when attempting to identify such organizations in urban, suburban, and rural areas. The course will describe known or suspected creeds followed by several terrorist organizations.

INTL 104 Recruitment, Preparation and Training of Terrorists **3 credits**

This course will describe the recruitment, preparation, and training of terrorists including past, current, and future initiatives. The course will cover the culture, subculture structure, and growth of terrorist organizations both domestic and international.

INTL 204 Intelligence in the Media **3 credits**

This course examines the intelligence community and how it is perceived in the movies, television, novels and in the news. Comparisons will be made with what is depicted and the actual event that inspired the media. Prerequisites: INTL 101, INTL 102.

INTL 210 Domestic Terrorism **3 credits**

This course examines the causes of domestic terrorism. It t explains why people join such organizations and how they are recruited. The course relates how these organizations have developed in the U.S. over the past 20 plus years. It explains why domestic terrorism has become prevalent and what steps have been taken to curb its growth. It also describes how U.S. law enforcement is addressing the problem and what laws have been created to stop its growth and deal with its members.

INTL 211 Evolution of Intelligence **3 credits**

This course analyzes the historical development of intelligence services and describes the reason(s) which have resulted in the proliferation and need for these services. It also explores how historical, global, and technological changes have impacted the intelligence community.

INTL 194, INTL 294 Special Topics **3 credits**

INTL 300 Critical Thinking for Analysts **3 credits**

This course lays the foundation for the processes used by the intelligence community to determine credibility of assets and acquisition of intelligence prior to placing that intelligence into a matrix or on the link chart.

INTL 301 Integrated Intelligence Analysis **3 credits**

This course lays the foundation for the processes used by the intelligence community to determine credibility of assets and acquisition of intelligence and the placing of intelligence into link chart for further analysis, merging, and cooperation among agencies or in fusion centers.

INTL 302 National Intelligence Authorities **3 credits**

As a nation of laws, this course covers the laws governing the collection, dissemination and use of intelligence as well

as defining the 17 agencies in the Intelligence Community; includes a detailed study of the Patriot Act, national Intelligence Act and Emergency Powers of the President.

INTL 304 Critical Issues in Risk Communications **3 credits**

Course focuses on risk communication within the context of terrorism and natural disasters. The didactic and experiential course will include core principles of risk communication, examine special challenges of risk communication with diverse audiences and media, and prepare students to create risk and crisis communication campaign in Risk Communication.

INTL 305 Intelligence Failures **3 credits**

This course will identify and describe perceived failures of the U.S. Intelligence community over the past 50 plus years, which have affected national security and U.S. foreign policy. The course further explores the laws and amended policies that have been implemented as a result of these failures and analyzes the effect of these changes on the intelligence community and foreign policy making.

INTL 306 Emergency Planning & Security Measures **3 credits**

This course will deal with the multi-faceted role of Federal, State and local law enforcement authorities in the U.S., and their part in the war on terrorism. The course will explore inter-agency degree of cooperation and suggestions for improving these roles through real time cooperation and the sharing of intelligence. The FBI Joint Terrorism Task Force (JTTF) will be used as a model.

INTL 310 Ethics of Spying **3 credits**

This course looks at the dilemmas that exist when someone is asked to perform a civil service that is in conflict with what that person believes to be ethical. Such ethics require and expect an intelligence officer to lie, deceive, steal, launder money, and perform a variety of other activities they would certainly be condemned as illegal if practiced in the United States. Prerequisites: INTL 101, INTL 102; PHIL 240.

INTL 311 Emergency Medical Services and Fire Operations **3 credits**

This course focuses on the rapid recovery of transportation services; emergency production, transmission, distribution, and telecommunications. Topics also include restoring public and private information systems; coordinating plans for medical and financial assistance to victims; stabilizing financial markets; and containing and removing hazardous materials.

INTL 312 Interrogation Techniques **3 credits**

This is an online course of study related to techniques of interrogation as used by the intelligence community. The course will cover current and past practices with an emphasis on the new guidelines for interrogating terrorists and combatants in the current war on terrorism. Prerequisites: INTL 101, INTL 102, INTL 310.

INTL 315, INTL 415 Intelligence Internship I, II **3 credits**

Experiential component approved by the department in a local or national agency focusing upon security and intelligence. Methods of evaluation include periodic reports, journals and an-site evaluations. Prerequisites: Junior Standing and permission.

INTL 395 Special Topics in Intelligence **3 credits**

This course provides the opportunity for the program to offer courses in areas of the major that are not normally covered in the regular curriculum. It also provides for dual listing of appropriate courses within other university departments.

INTL 401 High Impact Event Planning **3 credits**

This course deals with the multi-faceted role of Federal, State and local law enforcement authorities in the United States and their role in the response to high impact events as described by the Department of Homeland Security. The course will explore inter-agency cooperation and strategies for improving collaboration through the use of shared assets. Inclusive in this course is a detailed review of the roles of state and local authorities in the event of such an attack.

INTL 402 Current Issues in U.S. Security Policy **3 credits**

This course examines, both objectively and subjectively, current issues in U.S. Security Policy both nationally and internationally. Students will compare various national intelligence strategies over a period of time from its inception to its current state of affairs.

INTL 403 Weapons of Mass Destruction **3 credits**

This course will describe chemical, biological and nuclear proliferation among terrorist organizations. The course will offer a virtual reality format of instruction in identifying and responding to occurrences where WMD are detected. The course will include the protection, detection and response to Dirty Bombs.

INTL 404 Mass Casualty Management Planning **3 credits**

This course covers the issues involved in dealing with mass casualties such as those created by major terrorist events, pandemics, nuclear accidents, tsunamis, and major earthquakes. An examination of past mass casualty events will be studied.

INTL 405 Counter Intelligence **3 credits**

This course consists of a comprehensive study of a minimum of four highly placed spies in our intelligence agencies. The methods and techniques utilized by the spies as well as the techniques utilized by our counterintelligence agents to discover and arrest those spies. In addition, the damage caused by each will be discussed in detail. Prerequisites: INTL 101, INTL 102.

INTL 406 Methods of Propaganda and Persuasion **3 credits**

This course explores the many ways that groups and governments have applied methods of propaganda and persuasion throughout history in order to modify the behavior of human populations for political, military, economic, and cultural ends. Students will examine historical examples of psychological operations and propaganda campaigns from a number of different sources as they analyze the patterns and techniques of target audience analysis, clarification of objectives and supporting objectives, selection of appropriate persuasion techniques, creation of persuasive products, and mitigation of blowback. Prerequisites: INTL 101, 102.

INTL 409 Intelligence Case Studies **3 credits**

This course will analyze significant de-classified intelligence cases, both military and non-military in nature. It will examine each selected case to evaluate the perceived necessity for the action and the ultimate outcome of the action(s). It also will analyze if policy and perceptions at the time of case initiation were flawed or accurately determined.

INTL 410 The President's Daily Brief **3 credits**

This course is designed to prepare Intelligence students to combine their subject knowledge, analytical abilities, and communications skill to prepare documents for use in the Intelligence Community, including Presidential Daily Briefs and the five basic types of Intelligence reports; basic information, current reports, evaluative assessments, estimative reports, and warning assessments. Additionally, students will hone their speaking skills by delivering oral briefs for a variety of target audiences.

MATH – MATHEMATICS

MATH 150 Mathematical Problem Solving **3 credits**

This course introduces an overview of the mathematics important in posing, communicating, and solving relevant quantitative problems. Concepts will be emphasized for their essential role in solving problems encountered in the modern professional world and in other academic fields with emphasis on theoretical, logical and technological methods. Specific topics form the fields of algebra, number theory, finance, probability, and statistics will be explored.

MATH 155 General Mathematics **3 credits**

A general mathematics course dealing with topics such as descriptive statistics/probability, geometry, estimation/measurement, percents/decimals/rational numbers, as well as other selected topics. Prerequisite: MATH 150.

MATH 165 Basic Algebra **3 credits**

Basic algebra including fundamental operations on numbers and polynomials, linear equations and inequalities, the Cartesian coordinate system and graphs, and systems of two linear equations. Also factoring techniques, fractions, fractional equations and laws of integer exponents.

MATH 175 Elementary Statistics **3 credits**

Data analysis and charts, rules of probability, conditional probability, distributions, random variables, sampling, confidence interval estimates, hypothesis testing, regression and correlation. Students enrolling in this course should have a background in college preparatory algebra, including high school Algebra I and Algebra II or equivalent.

MATH 180 College Algebra **3 credits**

This college level algebra course includes the study of linear, polynomial, rational, radical, quadratic, exponential, and logarithmic functions and their graphs. Other topics include inequalities, factoring, systems of equations, complex numbers, and applications. Students enrolling in this course should have a background in college preparatory algebra, including high school Algebra I and Algebra II or equivalent.

MATH 181 Pre-Calculus **4 credits**

This course introduces the foundations of analysis necessary to precede the calculus sequence with emphasis on college algebra and trigonometry including the properties and graphs of linear, polynomial, rational, exponential, logarithmic, trigonometric functions and inverse trigonometric functions. It will also include solving equations, trigonometric identities and complex numbers. Prerequisite: College Preparatory Algebra, Geometry and Trigonometry.

MATH 185 Trigonometry **2 credits**

Includes trigonometric functions, inverse functions, trigonometric identities, reduction formulas, half and double angle formulas, solutions of triangles and other applications. Prerequisite: MATH 150 or MATH 165 or College Preparatory Algebra.

MATH 190 Calculus I **4 credits**

Functions and limits, the derivative and its significance, differentiation of algebraic functions, applications to rate of change and optimization problems; the integral, area, averages and elementary integration techniques. Prerequisites: MATH 180.

MATH 205 EPE Calculus **3 credits**

An Introduction to Engineering Problems using Trigonometry, Differential and Integral Calculus, Vector Analysis, Differential Equations and other applicable concepts. Prerequisite: MATH 190.

MATH 210 Calculus II **4 credits**

Basic applications of the integral, derivative and integral of exponential, log and trigonometric function, techniques of integration, indeterminate forms. Prerequisites: MATH 185, MATH 190.

MATH 220 Discrete Mathematics **3 credits**

Logic, sets, mathematical induction, relations, functions, Boolean algebra and rudiments of combinatorics and graph theory are covered. Prerequisite: MATH 180.

MATH 230 Linear Algebra I **3 credits**

System of equations, Gaussian procedure, matrix algebra, determinants, geometry of two and three dimensional vectors, vector space R^n, subspaces, linear independence and spanning, basis and dimension, eigenvalues and eigenvectors. Prerequisite: MATH 190.

MATH 300 Calculus III **4 credits**

Sequences and series, polar coordinates, two and three dimensional vectors and curves, functions of several variables, partial differentiation, multiple integrals and applications. Prerequisite: MATH 210.

MATH 310 Differential Equations **3 credits**

First order differential equations, linear differential equations, series solutions and transform methods. Prerequisite: MATH 210.

MATH 320 Linear Algebra II **3 credits**

Vector spaces, linear transformations and matrices, bilinear forms, inner product spaces, diagonalization and functions of matrices. Prerequisite: MATH 230.

MATH 330 Mathematical Statistics **3 credits**

A calculus-based course covering permutations and combinations; random variables; basic, discrete and continuous distributions; expected values and moments; sum of independent identical random variables; and selected topics on statistical estimation and inference. Prerequisite: MATH 210.

MATH 340 Modern Applied Algebra **3 credits**

Introduction to semigroups, groups, rings, fields and algebras with emphasis on applications to the theory of computation. Prerequisites: MATH 220, MATH 230.

MATH 410 Geometry **3 credits**

Geometry from an advanced viewpoint including a historical analysis of axiomatic systems and the relationship between geometry and other areas of mathematics. Topics include a rigorous treatment of classical Euclidean geometry incorporating postulate development, problem solving, and construction proofs in two and three dimensions, coordinate geometry, and the introduction of non-Euclidean geometries, such as elliptic and hyperbolic. Prerequisites: MATH 185, MATH 220.

MATH 194, MATH 294 Special Topics **3 credits**

MATH 296, MATH 396, MATH 496 Independent Study in Mathematics I, II, III **1-6 credits**

MATH 499 Honors Internship in Mathematics **1-6 credits**

Available to qualified students as a practicum within the University or in conjunction with an external agency. Requires regular progress reports and a final paper. May be repeated for credit. Prerequisites: Consent of an instructor to act as a sponsor, acceptance by an agency if applicable, approval of the department chair, an overall G.P.A. of 3.30 and a departmental G.P.A. of 3.50.

ME – MECHANICAL ENGINEERING

ME 101 Statics **3 credits**

Introduction to mechanical engineering through the study of the equilibrium of particles and rigid bodies using trigonometry and vector analysis. The ability to compose complete free body diagrams is strongly emphasized. Vector methods are employed to investigate forces and moments in planar and three-dimensional problems. Pin jointed frames are analyzed using the method of joints and the method of sections. Problems involving friction and systems of cables and pulleys are solved. Properties of area including centroid first moment and second moment complete the course. Co-requisite: MATH 181.

ME 102 Dynamics **3 credits**

The kinematics and kinetics associated with the simple or complex motion of particles and rigid bodies based upon the principles of the differential and integral calculus. Kinematics involves analysis and quantification of position, velocity and acceleration of the body. Kinetics involves applied force, momentum, potential and kinetic energy, impulse and moment of momentum. The course includes extensive coverage of ballistics, relative motion and central force field problems. Prerequisite: ME 101. Co-requisite: MATH 190.

ME 212 Properties of Materials **3 credits**

A study of atomic and crystalline structure as a means of understanding material behavior. The influence of defects, strengthening mechanisms and heat treatment are examined. Mechanical strength properties in tension, compression and shear are examined along with the testing means used to determine these properties. Hardness and impact strength and related test procedures are investigated. The iron-carbon phase diagram is studied in the context of selecting the appropriate heat treatment procedure. In addition to metals and alloys coverage extends to ceramics, plastics and composites. Prerequisites: CHEM 101, CHEM 103.

ME 213 Strength of Materials **3 credits**

The analysis of tensile and compressive plane stress, shear stress and bearing stress. The compounding of plain and shear stresses in rectilinear coordinates. Rotation of a system of stresses about a single axis leading to equations for the zero sums of forces and moments along and about the remaining principle axis (Equilibrium). Production of equations for the maximum and minimum principle stresses, maximum shear stress and the principle planes to which these are normal and tangential respectively. Formation of Mohr's circle as a graphical means of analysis. Use of the von Mises criterion. Examination of shear stress and angle of rotation due to torsion. Examination of tensile, compressive and shear stresses due to bending production of shear stress and bending moment diagrams. Formation of the equation of the elastic line and its use in determination of displacement and rotation at a point along beams with concentrated and distributed loads and with simple and fixed supports. Beams with more than two supports. The stability of columns. Stress and displacement of thin wall and thick wall cylinders under internal pressure. The study of shrink fits. Prerequisites: ME 101, MATH 210.

ME 214 Strength of Materials Lab **1 credit**

Introduction to materials testing including tension, compression, ductility, hardness, modulus of elasticity in tension and torsion, shear strength, and beam and column testing. A special assignment, including a written report and an oral

presentation, is required.

ME 215 Thermodynamics I 3 credits

The kinetic theory of gases is used to generate the ideal gas law and the law for adiabatic expansion and compression. For adiabatic processes a set of six equations and their reciprocals are generated for the following: final pressure in terms of initial pressure and volume ratio, final volume in terms of initial volume and pressure ratio, final pressure in terms of initial pressure and the temperature ratio, final temperature in terms of initial temperature and pressure ratio, final temperature in terms of initial temperature and volume ratio, final volume in terms of initial volume and temperature ratio. Relationships between constant pressure and constant volume specific heats, the characteristic gas constant and the exponent used in the adiabatic relationships are explained. The use of reduced pressure and temperature (actual value divided by critical value) with the Nelson-Obert generalized compressibility chart provides a factor which when used with the ideal gas law becomes the law for real gasses. Gas/vapor mixtures are discussed. Equations for work in constant pressure, constant temperature, polytrophic and adiabatic situations are derived and one used along with the concept of internal energy change and heat transfer to form the first law of thermodynamics. The concept of enthalpy is introduced. Potential and kinetic energy effects along with enthalpy changes lead to the first law for a flowing system. Power cycles investigated are the Rankine cycle with superheat and reheat, the Brayton cycle with compressor intercooling reheat and regeneration and the Turbo-Diesel cycle. Refrigeration cycles are the vapor compression cycle and the reverse Porceyton cycle. A brief discussion on entropy and the second law. Prerequisite: MATH 190.

ME 194, ME 294 Special Topics 3 credits

ME 315 Thermodynamics II 3 credits

The course introduces the second law of thermodynamics and the fluid property entropy. This permits extended analysis of power cycles such as the Brayton gas turbine cycle and refrigeration cycles such as the vapor compression cycle. Thermodynamic relationships are developed and are featured in a variety of solved problems. Pre: ME 215

ME 320 Kinematics of Machine Elements 4 credits

The course opens with a definition of terms such as "link," "pair," "revolute" and "mobility." The Chebychev-Grubler-Kutzbach equation is justified and is used to find the mobility of an assortment of mechanisms. Equations for the slider position, velocity and acceleration of the linline and offset slider crank mechanisms are produced. Results for velocity and acceleration generated via the differential calculus and via the application of the finite difference method are compared with those obtained from "Working Model" software. Vector analysis and trigonometry are used to produce and equation for the rocker tip position of the four bar crank-rocker mechanism. Again, values for velocity and acceleration gained from the calculus, the finite difference method and from working model are compared. A graphical method is used to justify Grashuf's theorem. The straight-line mechanisms of Roberts and Chebychev are analyzed. Cycloidal, involute, epicycloidal and hypocycloidal motions are determined using vector analysis. The importance of involute motion is gear tooth. Interaction is examined. Gear trains using gear and pinion, epicyclic and hypocyclic elements are analyzed to determine speed ratio and rotational direction. Graphical and analytical methods are used to design rotary plate cams which impart simple harmonic or cycloidal motion to various follower types. Wedge cams having tangential circular arc, tangential parabola, cycloidal and simple harmonic profiles are designed. The laboratory component involves teams of two or three students producing two detailed professionally presented reports on offset slider-crank and crank-rocker mechanisms which are designed to a set of specifications. Prerequisite: ME 102, MATH 210.

ME 331 Engineering Design Using Pro/ENGINEER 3 credits

The course begins with the PowerPoint presentation "Familiarization with Pro/ENGINEER" followed by a simple demonstration by the instructor. Twelve lessons follow a pattern where by instructor demonstration of the Pro/ENGINEER feature which is the topic for the evening, is followed by individual student-instructor interactions until students are competent in the use of the feature. The Extrude feature is used to create an electrical bus-bar, a sports emblem, and a bolt-nut-flat washer combination. The Sketch File feature is also used with the bolt-nut-flat washer combination with the addition of a lock washer. Pattern, Hole, and Mirror features are used to complete the work on the electrical bus-bar. Other exercises include creation of an exploded assembly, creation of a drawing file and creation of datum points. These are followed by the use of the Piping and Sweep features and the creation of an assembly using aligned datum's. The Blend, Revolve, Chamfer and Suppcess features are covered. The course ends with the creation of a drawing having a bill of materials. Three sessions are reserved for examination where the students work without assistance on a model prescribed by the instructor. Prerequisite: ET 204.

ME 405 Heat Transfer 4 credits

The course begins with a discussion of Fourier's law governing steady state axial conduction. The law of continuity is used to expand this into the Poisson equation in rectilinear coordinates, which describes the special temperature field

resulting from transient heat flow in three dimensions with internal heat generation. Analytical techniques are limited to solutions involving only two of the four independent variables (three spacial plus temporal). A wide variety of problems are solved including those for which the cross sectional area of the conductor is variable and for which thermal conductivity varies as a function of temperature. The Poisson equation is next derived in popular coordinates. This leads to solutions to conduction problems involving cylinders and annuli with or without internal heat generation. The study of the extended surface provides equations for temperature distribution along the length of a fin and for fin efficiency. The study of convective heat transfer begins with the use of Buckingham Pi theorem to show the importance of Reynolds number and the Prandl number. Correlations for convective heat transfer within conduits and external to surfaces are presented and discussed. In problem solving, the emphasis is on turbulent flow situations. Our work on convection culminates with the design of a shell and tube heat exchange where the concept of log-mean temperature difference is introduced. Our work on radiative heat transfer leads to an equation for an effective heat transfer coefficient when surface temperature changes as a function of time, as in the case for the cooling of steel or aluminum ingots or strip. A conclusive section involves the treatment of nucleate boiling where micro-convection dominates and with film boiling which can lead meltdown. Prerequisite: MATH 310.

ME 406 Heat Transfer Lab **1 credit**

This course provides a means of verifying various elements of heat transfer theory through experiments in conduction, convection, and radiation for gasses and/or liquids. Comprehensive reports are required. Prerequisites: ME 215, ME 405

ME 411 Fluid Mechanics **3 credits**

The course begins with a study of fluid statics. This includes buoyancy and the criteria for stability of buoyant objects. The relationship for hydrostatic force on a submerged surface along with the determination of center of pressure is used to solve problems involving vertical and inclined sluice gates. Hydrostatic forces on curved surfaces are determined. Moving into fluid dynamics Bernoulli's equation for incompressible flow is generated and is applied to the determination of static, dynamic and stagnation pressures. It is shown that the general energy equation for steady flows reduces to Bernoulli's equation if terms representing work input and mechanical losses are eliminated. Analysis of hydroelectric power generation is a typical application of the general energy equation. The Buckingham Pi theorem is used to show the importance of Reynolds number in the determination of frictional pressure loss for flow within a conduit. The equation for pressure loss in laminar flow is generated. For turbulent flow the friction factor is determined empirically using for example the Colebrook equation. The concept of relative surface roughness is introduced. The Moody chart is presented. Dynamic head losses are covered for entries, exits, elbows and transitions. Simple piping networks are analyzed. The characteristics of various types of pump are presented. The concept of specific speed is introduced and is used for selecting the best type of pump for a particular application. For external flow the relationships for drag and lift are presented. Appropriate application of a fan, a blower or a compressor for a particular air moving situation is the concluding event of the course. Prerequisites: ME 102, MATH 190.

ME 412 Fluid Mechanics Lab **1 credit**

Introduces students to the special tools used by the fluid power industries and the manual skills required in implementing fluid mechanics applications. Special techniques in flow measurement and implementation. ME 411.

ME 416 Dynamic Systems and Vibrations **3 credits**

This course integrates differential equations with dynamics to provide a means of modeling, analyzing, and controlling mechanical and electrical systems. The course begins with a review of the Laplace transform and the frequency domain. Modeling of dynamic systems starts by developing system equations using free body diagrams, Newton's second law, Ohm's law, and Kirchoff's laws. These system equations are the converted to transfer functions (using the Laplace transform) or to a state space representation. Once the system is modeled, the response to various inputs can be determined in the time domain and the frequency domain. These system responses can also be controlled using various feedback control methods, such as PID and LQR methods. Finally, the course ends with discussions of vibration transmission and isolation. Prerequisites: MATH 230, MATH 310.

ME 421 Machine Design, Theory and Project **4 credits**

The course begins with a review of basic strengths of materials including plane stress, shear stress, stresses due to bending and torsion and the stability of columns. Further work includes the generation of equations for principle stress and maximum shear stresses resulting from the compounding of bending and torsional stresses. The von Mises criterion is presented. Rayleigh's equation for the critical speed of shafts carrying gears is developed and the method is applied to systems having three concentrated loads with two bearings. Bearings might be of the sleeve or spherical roller type. A shaft design project requires that students draw from their knowledge of dynamics and strength of materials to determine the required diameter of a shaft which is subject to bending and torsion and must transmit a specified power using a given

safety factor. The critical speed of the system is determined. Stresses are determined for thin walled and thick walled cylinders which are subject to internal pressure. This work is extended to deal with concentric cylinders and shrink-fits. Keys and keyways are designed using maximum shear stress and maximum bearing stress criteria. Belt drive systems are designed with consideration of lifting systems includes those using acme power screws and those using ball screws. Drum brakes, disc brakes and clutches are designed. The course closes with work on proper choice of electric motors for a given application. Prerequisites: MATH 210, ME 102, ME 213, ME 320.

ME 424 Finite Element Analysis **3 credits**

The course begins with the generation of the stiffness matrix for systems of springs and cables in series or parallel connected form. Rotation of axes permits rigid element to be pin jointed to form a truss. The stiffness matrix of each member is written in terms of the global "x" and "y" axes of the truss to form the global truss stiffness matrix. Loads and supports are applied to nodes (the pin joints) to form a force vector. A vector representing the "x" and "y" displacement at the nodes is written. By Hook's law the scalar multiplication of the stiffness matrix into the displacement vector is seen to equal the force vector. After a review of bending theory the FEA method is applied to simply supported and built-in beams to form the beam stiffness matrix. Using the work equivalence concept, synthetic loads and moments are applied at the nodes to represent real distributed loads that exist between the nodes. Symmetry is used where applicable. The work on frames is combined with the work on beams to form the stiffness matrix for each element of a rigidly jointed planar structure. After globalization and the formation of a vector of applied forces and moments, the system is solved to yield a vector of "x" and "y" displacements and rotations at every node. Following a review of torsional theory the FEA method is applied to grid structures for which the loading gives rise to twisting and bending. Again a stiffness matrix for a grid element is generated. Following globalization vectors are formed for forces and moments and for displacements and rotations. Solution yields displacements and rotation at the nodes. After a review of Fourier's and Poisson's equations for heat conduction the calculus of variations is used to form conductance matrices and heat flux vectors for a variety of multi element heated or cooled objects for which nodal temperatures must be determined. Internal heat generation is accounted for. Boundary conditions include adiabatic, applied heat flux and convective heating or cooling. Prerequisite: MATH 230, MATH 310, ME 213, ME 405.

ME 425 FEA and ANSYS **2 credits**

The course begins with an overview of the finite element method followed by an exploration of the ANSYS interface and ANSYS help facilities. Key points in a plane are established and are connected to form a truss. Constraints and loads are applied. The displacement of key points (nodes) under the loaded condition are determined. Meshing methods are introduced and are applied to plates. Plane stress and plane strain are determined for plates that are subject to a variety of loading conditions. Axisymmetric problems are introduced. These include analysis of stress in the shell of a cylindrical vessel which is subject to internal or external pressure loading. Key points in three dimensions are established and are connected to form a three dimensional structure. Plates are applied to the structure and are meshed. Constraints and loads are applied. The stress and strain pattern over the structure is produced. Beams that have simple and built-in supports are subjected to concentrated and distributed loads. Displacement and rotation at selected nodes are established. Application of ANSYS to problems in heat transfer includes axisymetrical and asymmetrical objects that are subject to a variety of surface heat flux and convective cooling conditions. Radiative boundary conditions are also applied. The object might also have internal heat generation. Steady state and transient situations are examined. Co-requisite: ME 424.

MET – MECHANICAL ENGINEERING TECHNOLOGY

MET 101 Statics **3 credits**

The study of the equilibrium of particles and rigid bodies using mathematical and/or graphical analysis. Free-body diagrams are strongly emphasized. Vector methods are employed to investigate forces and moments in planar and three-dimensional problems. Pin jointed trusses and frames are analyzed using the method of joints and the method of sections. Problems involving friction and properties of area including first moment, centroid and second moment complete the course. Dual listed as CET 101. Prerequisite or co-requisite: MATH 185.

MET 102 Dynamics **3 credits**

The kinematics and kinetics associated with the simple or complex motion of particles and rigid bodies based upon the principles of the differential and integral calculus are investigated. Kinematics involves analysis and quantification of position, velocity and acceleration of the body. Kinetics involves applied force, momentum, potential and kinetic energy, impulse and moment of momentum. There is extensive coverage of ballistics, relative motion and central force field problems. Prerequisite: CET/MET 101.

MET 212 Properties of Materials **3 credits**

A study of atomic and crystalline structure as a means of understanding material behavior. The influence of defects, strengthening mechanisms and heat treatments are examined. Mechanical strength properties in tension/compression, shear, hardness and impact and related test procedures are investigated. The Iron-Carbon phase diagram is studied. Coverage also addresses ceramics, plastics and composites. Dual listed as CET 212. Prerequisite: CHEM 101.

MET 213 Strength of Materials **3 credits**

The study of stress and strain, deformation, riveted and welded joints, thin-wall pressure vessels, torsion, shear and stresses in beams, design of beams, deflection of beams, Mohr's circle and columns. Reference to applications for civil and mechanical engineering technology. Dual listed as CET 213. Prerequisites: MET 101, MET 212; Prerequisite or co-requisite: MATH 190.

MET 214 Strength of Materials Laboratory **1 credit**

Introduction to materials testing including tension, compression, ductility, hardness, modulus of elasticity in tension and modulus of rigidity in torsion, shear strength, and beam and column testing. A special assignment, including a written report and oral presentation, is required. Dual listed as CET 214. Prerequisite or co-requisite: MET 213.

MET 215 Thermodynamics **3 credits**

Topics include the properties of ideal and imperfect gases and two-phase mixtures. All thermodynamics properties such as internal energy, entropy and enthalpy are defined and applied. The concepts of work and heat transfer are examined through a wide variety of problems. The first and second laws are covered from both system and control volume viewpoints, for static fluids and for fluids in motion. Refrigeration cycles, steam cycles and gas turbine cycles are covered in detail utilizing steam tables, gas tables, T-S and P-H diagrams. Prerequisite: MATH 190.

MET 320 Kinematics of Machine Elements **4 credits**

Kinematic analysis of displacement, velocity and acceleration is applied to a variety of machine elements, including three-bar and four-bar linkages, cams and gears. Analytical techniques that make extensive use of the differential calculus, are stressed. These are coupled with graphical methods for the design of plate cams. Extensive use is made of commercial software packages including "Working Model®" and "ALGOR® Event Simulator FEA®", in a comprehensive lab component. Prerequisites: CMPS 204; MATH 190; MET 102.

MET 331 Engineering Design Using Pro/ENGINEER® **3 credits**

Engineering Design Using Pro/ENGINEER® gives the student the ability to use the most advanced and highly regarded design software. Aspects of the course include sketching, 3D part modeling, 3D assemblies, exploded assemblies and the creation of manufacturing drawings from the parametric model. Students produce PowerPoint presentations to display completed work. Prerequisite: CMPS 204.

MET 405 Heat Transfer **4 credits**

A study of the fundamental laws of conduction, convection, boiling, condensation and radiation. Analytical methods are applied to one and two dimensional conduction problems with convective boundary conditions. The foundations of empirical equations for a variety of convection situations are examined using similitude methods to form dimensionless groups such as Nusselt Number. Theory is rigorously reinforced through the solution of many problems. Fundamental laws are applied to the design of variety of heat exchanger types. A heat exchanger design project is included. Prerequisites: ET 204, MATH 210, MET 215. Prerequisite or co-requisite: MATH 310.

MET 411 Fluid Mechanics **3 credits**

The study of the physical behavior of incompressible and compressible fluids and fluid systems. Hydrostatic and hydrodynamic systems are considered. Fluid transmission and control applications include the design of weirs, orifices and valves. The determination of pressure losses in open and closed systems is covered. Other topics include the storage of energy by pressurized fluids in closed systems. Problems of interest in both Civil and Mechanical Engineering Technology are included. Dual listed as CET 411. Prerequisites: MET 102; CMPS 204; MATH 210.

MET 412 Fluid Mechanics Laboratory **1 credit**

Introduces students to the special tools used by fluid power industries and the manual skills required in implementing fluid mechanics applications. Special techniques in flow measurement and implementation. Dual listed as CET 412. Prerequisite or co-requisite: MET 411.

MET 416 Mechanical Vibrations **3 credits**

The study of single and multiple degree of freedom vibration systems. Undamped unforced, damped unforced, undamped forced and systems with both damping and forcing are covered. Spring elements of the helical, torsion bar and leaf spring types are included. Dampers are of the viscous or frictional type. Forcing functions are harmonic or impulsive. The emphasis is on producing the differential equation(s) from the free body diagram and inertial considerations, solution of the equation(s) and application of the solutions to practical problems. Prerequisites: MET 102; CMPS 204; MATH 210. Prerequisite or co-requisite: MATH 230 or MATH 310.

MET 421 Machine Design: Theory and Project 4 credits

Analysis and design of a wide variety of machine components. Machine frames are analyzed from compound stress, fatigue stress and deflection viewpoints. Among machine elements that are covered are keys, shrink fits, shafts, power screws, disc and drum brakes, gears, couplings, belt drives and cable systems. A design project is included. Prerequisites: MATH 210; MET 102, MET 213; CMPS 204.

MET 424 Finite Element Analysis (FEA) 3 credits

Teaches the use of the finite element method wherein the algorithms for elements subjected to axial forces and bending are developed. Also developed are the algorithms for pin-jointed frames, stiff jointed frames and grid structures. Algorithms for conduction heat transfer with convective boundary conditions and internal heat generation are developed. Problems are solved in all areas of application. Prerequisite: MATH 210. Prerequisites or co-requisites: MET 405, MET 411.

MET 425 FEA with ANSYS® 2 credits

This course complements MET 424 (Finite Element Analysis (FEA)). In MET 424 the basic finite element algorithms for elastic members, pin-jointed and rigid-jointed frames, bending of beams, torsional members and grid structures were developed. Also developed were the finite element algorithms or conduction heat transfer with convective boundary conditions. Hand and spreadsheet calculations for simple systems were performed. In MET 425 the student will learn how to use the commercial finite element software **ANSYS®** to perform analysis of much larger systems. Additionally the methodology for performing stress calculations for plates and shells is presented and applied. Prerequisite or co-requisite: MET 424.

MET 194,MET 294 Special Topics 3 credits

MET 295, MET 395, MET 495 Special Topics in Mechanical Engineering Technology I, II, III 1-6 credits

MET 296, MET 396, MET 496 Independent Study in Mechanical Engineering Technology I, II, III 1-6 credits

MET 499 Honors Internship in Mechanical Engineering Technology 1-6 credits

Available to qualified students as a practicum within the University or in conjunction with an external agency. Requires regular progress reports and a final paper. May be repeated for credit. Prerequisites: Consent of an instructor to act as a sponsor, acceptance by an agency if applicable, approval of the department chair, an overall G.P.A. of 3.30 and a departmental G.P.A. of 3.50.

MLNG – MODERN LANGUAGES

MLNG 205 Languages of the World 3 credits

This course introduces students to theories of human language. Students will look at how and when speech and writing systems developed, including the history and evolution of various protolanguages. Students will study geographic, political, and sociocultural factors involved in language development and use. The course includes language recognition and analysis activities and directed application of theory. Dual listed with GCS 205.

MLNG 221 Spanish Literature in Translation 3 credits

The same course format as MLNG 220 but with different texts.

MLNG 260 Japanese Culture 3 credits

A study of the culture of Japan with special emphasis on the historical development and underlying dynamics of the Japanese world view. Education, child-rearing, business practices, morality, relationships, language, and the arts will be

explained. Dual listed as SOC 260.

MLNG 302 Introduction to Linguistics **3 credits**

Provides students with an introduction to broad areas of linguistic theory and inquiry, including an introduction to the study of morphology, semantics, syntax, phonetics, phonology, and historical linguistics. It also includes an introduction to areas included within the disciplines of psycholinguistics and sociolinguistics. Dual-listed as ENGL 302.

MLNG 375/GCS 375 Popular Culture **3 credits**

Examines the American experience in terms of its multiple cultural expressions. By adopting the methods of social scientists, the students will develop an analytical perspective and gain awareness of American culture and of cross-cultural communication. Issues such as stereotyping and representation of "the other" will be explored. The theoretical considerations, along with a close focus on various cultural texts (literary, print, and visual media)-through a practice of "reading also between the lines'-will provide the students with greater understanding of culture in general and of the processes involved in cultural production.

MLNG 194, MLNG 294 Special Topics **3 credits**

MLNG 295, MLNG 395, MLNG 495
Special Topics in Modern Languages I, II, III **1-6 credits**

MLNG 296, MLNG 396, MLNG 496
Independent Study in Modern Languages I, II, III **1-6 credits**

NSET – NATURAL SCIENCES, ENGINEERING, AND TECHNOLOGY

NSET 110 Introduction to the Physical and Space Science **3 credits**

An introductory course designed to allow students to explore the basic concepts of physical and space science. Concepts to be covered include kinematics, thermodynamics, electricity and magnetism, waves, atomic structure of elements, radioactivity, the Universe, galaxies, the solar system and life cycle of stars. This course is intended for non-science majors.

NSET 111 Introduction to the Life Sciences **3 credits**

An introductory course in the life sciences designed for students who are interested in learning more about cells and the fundamental processes of life. The course is designed to introduce students to concepts, including basic aspects of chemistry as they relate to life, cells, cellular structures and functions, cell division, nucleic acids, Mendelian genetics, proteins, biodiversity and evolution, and human systems. This course is intended for non-science majors.

NSET 122 The Science of Light **3 credits**

In this course students will investigate what light is as well as what light does. Our very existence depends on the energy provided by visible and invisible light from the sun, and mankind's continued development of technology to take advantage of the properties of light can be traced back to as early as 1900 B.C.E. The class discussions will be related to the work being done in the laboratory. Through lecture and lab experiments, students explore some of the fundamental properties of light and how these properties are utilized to enrich our lives and define their environments. Experiments in the lab consists of exploring the themes of reflection, refraction, lenses & optical instruments, dispersion, light & color, interference, polarization, diffraction & interference, and other applications.

NSET 130 Owner's Manual for the Human Body **3 credits**

A survey of the human body, including the skin, skeleton, and muscles, as well as the respiratory, circulatory, digestive, excretory, nervous, endocrine, and reproductive systems.

NSET 131 Impacts of Microbes and Infectious Diseases on History **3 credits**

This course examines the many ways infectious diseases have impacted history. It provides examples of several important infectious diseases that have impacted civilizations, religion, war, immigration and even science. We will aim to reinterpret historical facts in the light of infectious disease and understand how microbes have affected and altered history. The course will cover diseases including The Black Plague, Syphilis, Smallpox, Influenza, Ebola, Mumps and other lesser-known diseases.

NSET 133 Kinesiology **3 credits**

This course is designed to provide students with a foundation for understanding the relationship between the skeletal and muscular systems of the body and how they correlate in the creation of movement. Other course components include the analysis of movement, referencing the Cardinal Planes of Action and associated movements with each of these Planes of Action. This course will also focus on anatomical alignment for the purpose of increasing movement potential and encouraging effective training methodologies to reduce injury. Specific attention will be placed on joint actions, identifying the agonist muscles responsible for creating movement and the antagonist muscles responsible for joint stability. The course format is designed to provide students with a variety of experiential learning exercises, including: lectures, group discussions, presentations, lab/movement studies, quizzes, and exams.

NSET 160 Environmental Science **3 credits**

Students will investigate environmental science topics, with a focus on the relationship between humans and their environment. Topics include earth systems and resources, the living world, population, land and water use, energy sustainability, pollution and global change.

NSET 181 Astronomy, Space, and Time **3 credits**

This course is an introduction to the science of astronomy and astrophysics-planets, stars, galaxies, the physics of the cosmos, and our relationships to it all. In this course, students will investigate not just the facts of the universe, but how the scientific process is used to find them. Students will examine how we know where and when we are in the universe. Students will learn how stars work, how solar systems form, how galaxies evolve, how astronomers study exotic objects like neutron stars and black holes, and how they measure the distances to all of them. Students will also look at the evidence for how the universe began, its mysterious dark matter and dark energy, how it might end.

NSET 182 Are We Alone? The Search for Life in the Universe **3 credits**

Are we alone in the Universe? This course will use this question as a lens to explore astrobiology, the study of life in the universe. Throughout this course, students will apply critical thinking and evidence-based reasoning to come up with their own answer to this mystery. Students will examine keep topics in astronomy, geology, biology, chemistry, and other fields to investigate this question from all angles. Ultimately, students will make their own evidence-based conclusions about whether life exists elsewhere in the cosmos, where we might find it, and what it might mean if we don't.

NSET 218 Technical Communication **3 credits**

Development of skills in expository writing and speaking for students and professionals in science and technology. The techniques for writing directions, proposals, summaries, reports, and correspondence are covered. Techniques for effective oral presentation are included as well. Writing-in-disciplines class. Prerequisites: ENGL 101; availability of a personal computer with a word-processing program and Internet access; basic computer skills in word processing and use of on-line resources such as the World Wide Web.

NSET 243 Anatomy and Physiology for Dancers **3 credits**

A basic study of cell and tissue structure and function of the skeletal, muscular and nervous systems as they relate to kinesiology. Other systems that will be covered are the integumentary, circulatory, digestive, respiratory, excretory, hormonal and reproductive. Emphasis of the course is on the integrating functioning of these systems to maintain homeostasis.

NSET 355, NSET 356 Natural Science and Engineering Technology Internship I, II **3 credits**

A faculty member directs students in the preparation of specified papers and reports related to the work experience, evaluates and grades the course and requires summation at conclusion of the work project. Prerequisite: Junior standing.

NSET 455, NSET 456 Natural Science and Engineering Technology Internship III, IV **3 credits**

A faculty member directs students in the preparation of specified papers and reports related to the work experience, evaluates and grades the course and requires summation at conclusion of the work project. Prerequisite: Senior standing.

NSET 470 Case Studies in Environmental Science **3 credits**

Students in this course will analyze historical and present day case studies in environmental science. They will do this by reading both scientific literature and media reports about a given case. Students will learn to understand both of these approaches to the case and to effectively communicate about environmental science. Prerequisites: NSET 160, Senior Standing.

NSET 490 Funeral Service Capstone **3 credits**

Students will synthesize the skills acquired in the Clinical Embalming Practicum Experience at the Pittsburgh Institute of Mortuary Science with coursework in one of the programs in Funeral Service in writing and orally. This course will serve as the Capstone course for all Funeral Service Programs. This course cannot be completed without documentation of successful completion of CL EMB and PIMS.

NSET 194, NSET 294 Special Topics **3 credits**

NSET 295, NSET 395, NSET 495 Special Topics in NSET I, II, III **1-6 credits**

NSET 296, NSET 396, NSET 496 Independent Study in NSET I, II, III **1-6 credits**

PHIL – PHILOSOPHY

PHIL 100 Introduction to Philosophy **3 credits**

The nature of philosophy, its aims, methods and problems, in an atmosphere of questioning such issues as our knowledge of reality, the existence of God, concepts of self-identity, and ethics and morality.

PHIL 103 Introduction to Logic and Scientific Method **3 credits**

Principles of precise thinking and techniques of detecting fallacies including the nature and use of language, the methods of definition and of deductive reasoning and the testing of scientific hypotheses.

PHIL 201 Critical Thinking **3 credits**

This course studies the strategies, techniques and principles of effective problem-solving, decision making and critical analysis. Emphasis is placed on the development of critical thinking skill and their application. Prerequisite: ENGL 101.

PHIL 210 Existentialism **3 credits**

Study of existential philosophies of human nature, morality, social obligation and human knowledge.

PHIL 215 World Religions **3 credits**

Examination of philosophical assumptions and implications of belief systems represented by world religions such as Buddhism, Taoism, Hinduism, Judaism, Christianity, and Islam, as well as naturalism, agnosticism and atheism. The course will explore metaphysical, epistemological, and ethical assumptions and implications of various religions, anti-religious, and non-religious worldviews.

PHIL 240 Ethics in the Professions **3 credits**

Focuses on major ethical systems and theories regarding the development of moral behavior, the relationship between morality and the law, and applied ethics in professional settings.

PHIL 194, PHIL 294 Special Topics **3 credits**

PHIL 295, PHIL 395, PHIL 495 Special Topics in Philosophy I, II, III **1-6 credits**

PHIL 296, PHIL 396, PHIL 496 Independent Study in Philosophy I, II, III **1-6 credits**

PHYS – PHYSICS

PHYS 101 Physics I **3 credits**

Basic concepts of physics including kinematics, dynamics, work and energy concepts, fluids and solids. Applications of these concepts to different disciplines. Algebra based. Laboratory section: PHYS 103. Prerequisites: MATH 180.

PHYS 102 Physics II **3 credits**

Vibration and wave motion, geometric and physical optics, electricity and magnetism. Algebra based. Laboratory section: PHYS 104. Prerequisite: PHYS 101.

PHYS 103 Physics Laboratory I **1 credit**

Experimental techniques in mechanics, heat and sound. Prerequisite or co-requisite: PHYS 101.

PHYS 104 Physics Laboratory II **1 credit**

Experimental techniques in electricity and magnetism, optics, and atomic physics. Prerequisite or co-requisite: PHYS 102.

PHYS 201 Fundamental Physics I **3 credits**

Introductory, calculus-based physics, including kinematics, dynamics, work and energy, fluids, and thermodynamics. Also includes applications of these concepts to different disciplines. Associated lab: PHYS 103 (1 credit). Prerequisites: MATH 190.

PHYS 202 Fundamental Physics II **3 credits**

Introductory, calculus-based physics, including vibration and wave motion, geometric and physical optics, and electricity and magnetism. Associated labs: PHYS 104 (1 credit). Prerequisites: MATH 190, MATH 210, PHYS 201 or PHYS 101.

PHYS 194, PHYS 294 Special Topics **3 credits**

POLS – POLITICAL SCIENCE

POLS 102 American National Government **3 credits**

Examines basic principles, institutions and functions of American national government and the operation of the American political system and government. Identifies individual rights and responsibilities as citizens of local, state and national communities.

POLS 202 State and Local Government **3 credits**

Basic principles, institutions and functions of American government at the state and local levels. Emphasis on Pennsylvania.

POLS 205 World Geography **3 credits**

World Geography is the study of the geographic nature of the world's major social, political, and economic processes and problems. A central component of this class will be an analysis of the ways in which power has unevenly spread across the regions of the globe. This course starts and ends with an analysis of commodity chains as a means to understand the connections between colonialism, post-colonial imperialism, and the geographies of capitalism; environmental geographies of exploitation and destruction; the ways in which the global economy is governed; the relationships between race and geography; the production of gendered geographies; the production of specifically sexualized spaces; and conflicts that arise over and in various spaces, places, territories, and borders. By the end of the semester, students should have a firm grasp of geography's principal concepts and a solid orientation to the geographic nature of the world's major power inequalities and processes.

POLS 207 Public Policy Issues **3 credits**

Examines some of the most critical problems confronting America in the realms of domestic and international politics. Format of the class is primarily discussion with students using the daily and Sunday *New York Times* and other pertinent publications.

POLS 209 Law and Society **3 credits**

This course examines the origins and functions of the law, as it relates to society. Students gain an understanding on law, legal institutions and their relationship to social values and morality from critical perspectives, with a focus on how law achieves the balance between the interests of society and individual rights.

POLS 215 Introduction to the American Legal System **3 credits**

This course is a comprehensive overview of the foundations in the American legal system; of the necessary elements for law enforcement, the prosecution of law, and the defense of human rights; and of the rules of litigation civil and criminal cases. Students participate in immersive experiences like a mock trial, field trips to the local courts, case preparation/legal writing.

POLS 250 Introduction to Politics **3 credits**

This course is an overview of political science, including the basic theories, concepts and debates regarding political institutions and political behavior. Topics include ideologies and political cultures, political actors and the virtues of political participation, the state, government systems (federal vs unitary, parliamentary vs. presidential, party systems, voting systems), political economy, democratization, and other processes at the level of domestic and world politics.

POLS 276 Political Theory **3 credits**

This course examines classical texts of political philosophy in order to develop critical thinking skills and teach important concepts relevant for the tradition of Western political thought (justice, equality, liberty, the rule of law, democracy, representation, etc.). Students learn to read and interpret philosophical texts, distinguish between empirical and normative statements and "use" the theoretical perspectives to solve real-world problems in a final project. No pre-requisites.

POLS 280 Power, Politics, and Society **3 credits**

What does power mean? How's does it operate? And how is it contested? This course is an introduction to the subfield of political sociology, or the study of social power. Power and domination will be studies as they are wielded and contested primarily within the state-but also well beyond the state. Politics plays out within and between social institutions and social groups. In this course, social inequalities that result from the exercise of power and domination will be explored as will revolutions, social movements, and/or other forms of mass resistance.

POLS 290 Human Rights in Theory and Practice **3 credits**

This course examines human rights from various perspectives, historical, moral/philosophical, legal and political, and their contested meaning across countries and cultures. Students investigate how national governments implement human rights, and the boundaries of international human rights law. Case studies are used to discuss human rights abuses and the means of redress, from ad-hoc tribunals, regional courts of human rights and the International Criminal Court, to humanitarian interventions and nation-building processes in post-conflict societies. Students will carry-out research on human rights abuses and advocate for solutions. No prerequisites.

POLS 300 Legal Analysis and Writing **3 credits**

This course is an overview of legal analysis and writing. Students identify legal issues contained in a fact pattern, analyze statutes and cases, predicting the probable outcome of legal dispute, and communicating their legal analysis in writing. Students also learn the fundamentals of written advocacy by drafting case briefs, essays, memorandums of law, and other problem-solving assignments.

POLS 305 Trial Law and Procedure **3 credits**

An introduction to the rules governing trial procedures in civil and criminal lawsuits. Prerequisite: POLS 209.

POLS 308 Principles of Criminal Justice **3 credits**

An examination of the doctrine and principles involved in criminal law through analysis of cases and statutes. Prerequisite: POLS 209.

POLS 330 The American Presidency **3 credits**

The presidency as a major element of the American political system. The evolution of the leadership role in both domestic and foreign affairs. Prerequisite: POLS 102 or permission.

POLS 335 American Foreign Policy **3 credits**

The institutions and processes involved in foreign policy determinations. Past and current problems of American foreign relations. Prerequisite: POLS 102 or permission.

POLS 350 Nationalism **3 credits**

This course introduces students to the concepts and theories regarding nationalism, ethnic-conflict, and nation building. Students learn the most prominent explanations/theories of the emergence of nationalism, the tools to evaluate them and the effects of nationalism on political identities, state formation(nation building),political violence, citizenship and migration.

POLS 355, POLS 356 Internship in Government or Legal Services I, II **3 credits**

A field experience in areas related to government or legal services. Proficiency requirements are determined through a student contract with the supervising faculty member and may include specific papers and reports related to the work experience. Prerequisite: Junior Standing.

POLS 358 Palestine/Israel: Politics, History, and Geography **3 credits**

This course provides an introduction to the politics, history, and geography of Palestine/Israel as a means to elicit better understandings of geopolitical patterns across the region and around the world. Students will examine the roles played by global superpowers, nationalism, various ideologies, territorial disputes, settler colonialism, conflict diplomacy, and movements for human rights in the ongoing political-geographic struggle between Palestine and Israel. While identifying the particular nuances to this case, the course illustrates the ways in which the violence and injustices related to Palestine/Israel are neither unique or inevitable.

POLS 372 International Relations **3 credits**

An examination of the major elements and persistent problems in the world community of states. Prerequisites: POLS 250 or HIST 202 or permission.

POLS 376 Theories of Justice **3 credits**

What is Justice? How can we realize our different conceptions of good life in harmony with each other, and what kind of society and political order does that entail? What type of moral obligations and global arrangements lead to just international order? By exploring the work of John Rawls and his critics, this course examines justice at both state and global levels, from various political philosophical perspectives :utilitarian ,conservative, libertarian, liberal, and cosmopolitan. We address topics such as: the status of women and minorities, poverty, forced migration, human rights violations, climate change, war, as well as the means of achieving justice, among which-civil disobedience and the reform of global institutions.

POLS 380 Global Governance: International Organizations and Politics **3 credits**

This course examines the ways in which international actors have "established" order in the international system in the globalization era. The focus is on the most important global and regional organizations (the UN, the EU, NATO, etc.) and the political processes that made them possible and under which they currently operate. Other forms of governance relating to security, trade, environment or international criminal justice (e.g. the International Criminal Court) are also discussed.

POLS 402 Constitutional Law **3 credits**

The interpretation and application of the Constitution of the United States. Emphasis on constitutional law. Writing-in-disciplines class. Prerequisites: POLS 102 or POLS 250 or permission.

POLS 408 International Law **3 credits**

The legal rules and principles that guide relationships among nations. Case materials cover international law and the International Court of Justice. Prerequisites: POLS 102 or POLS 250 or permission.

POLS 412 Seminar in History **3 credits**

This course allows students to synthesize the work they've done in their majors through directed research, evaluation, and writing. Students will write a substantive academic paper analyzing a specific research question they will choose early in the semester. Students will read examples of different types of scholarship in their fields including academic abstracts, introductions to monographs, and academic journal articles as examples of the types of work they will be writing. Students will have the opportunity to revise and review peer's work to ground their own skills. Prerequisite: Senior standing.

POLS 194, POLS 294 Special Topics **3 credits**

POLS 295, POLS 395, POLS 495
Special Topics in Political Science and Legal Studies I, II, III **1-6 credits**

(See Department Requirements for a partial list of Legal Studies and Political Science courses offered as special topics.)

POLS 296, POLS 396, POLS 496
Independent Study in Political Science I, II, III **1-6 credits**

PSYC – PSYCHOLOGY

PSYC 150 Psychological Foundations **3 credits**

Examines psychological foundations underlying the development of personal, professional, academic, and cultural

world views, and examines how those world views influence questions that human beings ask and answers they find. Students will be asked to express their ideas in both oral and written form.

PSYC 151 Theoretical Foundations to Psychology 3 credits

This course surveys and critiques various psychological disciplines and is designed to introduce psychology majors to the historical, philosophical and theoretical orientation of the department's psychology program. Students will read original and primary texts from significant authors and be encouraged to formulate their own interests, perspectives and critical **thinking in psychology.**

PSYC 201 Critical Thinking in Psychology and the Behavioral Sciences 3 credits

Students will be introduced to basic information literacy in the social and behavioral sciences. This course will help students to find, critically evaluate, and review literature in psychology and other behavioral and social sciences. Students will learn basic scientific methodology, understood from various perspectives of psychology, and learn how to identify whether scientific information is credible, reliable and /or valid. Students will learn to read original texts of case studies, phenomenology, ethnography, correlational research, experimental designs, and other approaches to investigation. In addition, students will learn to use APA style to complete a critical literature review on a relevant topic on interest in the field.

PSYC 202 Ancient to Modern Approaches to Psychology 3 credits

This course is the first in a sequence of two courses focused on the history and systems of psychology and is the prerequisite for the second course in the sequence, PSYC 302. The major systems under investigation will include pre-modern western and eastern systems of psychology, including aboriginal(e.g. African, Australian, Native American), Asian(e.g. Yoga, Taoism, Buddhism, Confucianism), Ancient Greek and Roman, Scholastic, Renaissance Humanism, Empiricism, Rationalism, Romanticism and Decadence perspectives on human psychology, as well as the emergence of modern laboratory psychology with psychophysics, physiological psychology, structuralism, functionalism, and eugenics. The systems will be outlined in relation to their social, cultural and historical context, and will be examined in an interdisciplinary fashion., in relation to correlative trends in the arts, humanities and physical sciences, to the extent that they illuminate the project of the theories under examination. Each system of human psychology will be critically evaluated through an examination of their metaphysical/ontological, epistemological, ethical and aesthetic claims, whether implicit or explicit within the theory. This course is designed for majors in psychology, though non-majors and minors may take the course with permission.

PSYC 203 Theories of Personality 3 credits

This course will present the fundamentals of existing theories of personality with special attention given to the implications of each. In-depth study of Freud, Jung, Adler and other selected theorists.

PSYC 204 Abnormal Psychology 3 credits

A study of central issues surrounding psychopathology. Current American Psychological Association (A.P.A.) classification of abnormal behavior patterns and the effects of maladaptive behavior on individuals' abilities to function in their environments.

PSYC 208 Introduction to Psychoanalytic and Psychodynamic Theories and Approaches 3 credits

This course will offer an introduction to the foundational texts of psychoanalytic and psychodynamic theories and approaches. Students will learn about development and psychopathology from different psychoanalytic and psychodynamic theories, as well as the unique therapeutic techniques in each. Topics this course will cover include psychosexual development, symptom formation, dreams and dream analysis, free association, and transference. We will also discuss what psychoanalytic theory might offer cultural analyses and critiques, with topics including racism, sexism, cults, commodity fetishism, and political movements, to name a few. Prerequisite: PSYC 150 or PSYC 151.

PSYC 210 Child and Adolescent Psychology 3 credits

This course provides an in-depth exploration of the psychological development of children and adolescents from infancy through late adolescence. Students will examine key theories of development, including cognitive, emotional, social, and physical growth. Emphasis will be placed on understanding the unique challenges and experiences faced by young individuals, including family dynamics, peer relationships, and cultural influences. Prerequisite: PSYC 150 or PSYC 151.

PSYC 213 Social Psychology 3 credits

This course will introduce students to the field of social psychology, the study of group influences on individual through, emotion and behavior. The course will examine areas of social psychology which include social learning and cognition, social affect, the self, attitudes, persuasion, social perception, social influence, conformity, obedience, interpersonal relationships, altruism, aggression, performance, and decision-making in working groups, stereotypes, prejudice, dis-

crimination, competition, and cooperation. This course is designed for non-majors and minors in psych who seek introduction to social psychology. PSYC 313 Critical Social Psychology is recommended for Psychology Majors.

PSYC 214 Psychology of Emotion **3 credits**

This course is a study of major theories of emotion and their emergence from cognitive, behavioral, physiological, social, and evolutionary perspectives in the discipline of psychology. Subject matter will include communication of emotion in nonverbal behavior, bodily expressions of emotion, the development of emotion, emotional dynamics in relationships and groups, the physiology of emotion, and cultural differences in emotion concepts and expression.

PSYC 215 Human Capital **3 credits**

The study of psychological principles used in Human Resource Management. The course will provide the student with a working knowledge of individual and group levels of organizational behavior and how to effectively manage the various types and levels of behavior within an organizational setting. Topics explored in the course include but are not limited to; individual and group behavior, organizational culture and structure and processes as they relate to performance and satisfaction in organizations. Topics under discussion at the individual level will include; attitudes, personalities, perception, motivation, diversity and ethics. Topics under discussion at the group level will include; organizational culture and structure, communication, decision making processes, conflict management, change, and stress and group dynamics. Prerequisite: PSYC 150.

PSYC 216 Psychology of Religion and Spirituality **3 credits**

A survey of the psychology of religion and spirituality, with an examination of biological aspects of religious and spiritual experience, developmental theories of religion, the phenomenology of religious and spiritual experience, religious virtues and values, and religious coping.

PSYC 217 Psychology of Evil and Destructiveness **3 credits**

An introduction to psychological theories of development , personality, and social psychology as they pertain to descriptions and explanations of malevolent and destructive patterns of behavior. The course will describe contemporary research on the assessment and development of destructive personality traits such as antisocial personality, narcissism, and Machiavellianism. In addition, the course will survey current social psychological research on destructive behaviors such as violence, prejudice, discrimination, and genocide.

PSYC 227 Cross-cultural Psychology **3 credits**

A comparison of the psychology of Western and non-western cultures. Includes an examination of the ways in which different child-rearing practices, family structures, educational systems, and world views interrelate to foster quite different conceptions of "self", "other", "abnormality", and "gender". Prerequisite: PSYC 203.

PSYC 230 The Characterological and Psychotic in Fiction and Film **3 credits**

This course will explore character development, organization and characterological disorder (personality disorders) by examining the tension between characterological and situational (episodic) psychopathology, ego development (syntonic and dystonic) and defense as portrayed in film and fiction. Using Greek literary themes and dramatism (tragedy, catharsis, hamartia, nemesis), current psychoanalytic theory, feminist reappraisals of psychopathology and social constructionist theory, the course generally critiques personality disorders (e.g., borderline, narcissistic, histrionic, dissociative, etc.) by closely examining the material of character development such as trauma and abuse (of psychological life) as well as tragedy and drama.

PSYC 231 Interpersonal Relationships **3 credits**

An in-depth examination of psychological research on interpersonal relationships, with particular attention to the effect of relationships on identity formation and self-structure. Includes an examination of the process of interpersonal communication.

PSYC 241 LGBTQ Mental Health **3 credits**

This interdisciplinary course provides foundational knowledge and general practice skills for lesbian, gay, bisexual, transgender, and questioning/queer (LGBT) individuals and communities. The course content will include an examination of historical and political perspectives, with an emphasis on contemporary mental health concerns and the psychological impact of stigma and discrimination against members of an LGBTQ communities. Social, psychological, cultural, behavioral, environmental, and biological factors contributing to health and mental health disparities among LGBTQ individuals and communities will be highlighted. Students will also explore ethical and legal issues and debates through the lens of psychology, psychiatry, and social work. Dual listed as SOCW 241.

PSYC 245 Introduction to Forensic Psychology **3 credits**

General introduction to the theoretical and clinical applications of the study of forensic psychology. Explores the psychological dynamics present in criminal behavior and the role of psychology in prevention and treatment. Also includes an examination of the psychological principles involved in jury selection, jury deliberation, and the treatment of witnesses and victims.

PSYC 251 Lifespan Development **3 credits**

This course offers a comprehensive overview of human development from conception through late adulthood. Students will explore the physical, cognitive, and socioemotional changes that occur at each stage of life, emphasizing the interplay between biological, psychological, and social factors. Prerequisite: PSYC 150 or PSYC 151.

PSYC 253 Psychology of Sexual Behavior **3 credits**

Students will be introduced to various theories of sexual behavior, such as psychodynamic, evolutionary, social constructionist, humanistic, and feminist perspectives. A basic introduction to sexual anatomy—its biology, functions and evolutionary history—will be examined. Students will learn how sexual motives may influence animal and human behavior without the explicit awareness of the organism or person. Students will also identify how evolutionary theory studies and predicts behavior based on the concepts of natural and sexual selection. Social constructionist, humanistic, and feminist approaches in the course will identify personal and social factors that influence sexual behavior in ways that may not be predicted by looking to biology.

PSYC 263 Psychology of Parenting **3 credits**

This course will explore the transition to parenthood and approaches to parenting. Topics will include attachment, childcare options, discipline, and encouraging intellectual and creative growth. It will also explore how to balance children's needs with personal and professional goals.

PSYC 266 Art Therapy **3 credits**

This course is a broad introduction to the field of Art Therapy with a focus on the artistic, historical, and philosophical bases of the field. Weekly classes will consist of art making, lecture, and discussion which will be supplemented by weekly reading and journaling. Students will explore their artistic and clinical identities in relation to art therapy and broader clinical disciplines.

PSYC 267 Zombies and Psychological Life **3 credits**

Why are zombies so compelling? This course examines the zombie as a cultural artifact that can be examined through various psychological perspectives. The zombie phenomenon is critically evaluated through the analysis of its manifestations in history such as , for example, its beginnings and interrelationship with African magic, Haitian Voudoun (Voodoo), Afro-Caribbean folklore, spirituality, mythology/signification, colonialism, slavery, racism, capitalism, and revolution. The zombie complex as a popular culture phenomenon will be explored through film (and other media forms), and in light of psychological theories, with an emphasis on postmodern and phenomenological approaches.

PSYC 302 Modern and Postmodern Approaches to Psychology **3 credits**

This course follows in a sequence from PSYC 202. The major systems under investigation will include the examination of theories within the broad spectrum of modern and postmodern psychologies, including natural science and human sciences approaches. The systems will be outlined in relation to their social, cultural, and historical context in 20th and 21st century psychology, and will be examined in an interdisciplinary fashion, in relation to correlative trends in the arts, humanities and physical sciences, to the extent that they illuminate the project of the theories under examination. The natural science psychologies of focus will include behavioral and cognitive theories of psychology. The human science psychologies under study will include classical and contemporary psychoanalysis and psychodynamic approaches, Gestalt psychology, humanistic psychology and person-centered theory, phenomenological and hermeneutic psychology, existential psychology, and post structural theory. Each system of human psychology will be critically evaluated through an ex-amination of their metaphysical/ontological, epistemological, ethical, and aesthetic claims, whether implicit or explicit within the theory. The course is designed primarily for majors in psychology. Non-majors and minors in psych may take the course only with permission of instructor.

PSYC 304 Counseling Theories and Practices **3 credits**

Introduction to affective and cognitive counseling theories. Practical applications and beginning self-exploration.

PSYC 305 Counseling Practicum **3 credits**

Designed to develop and sharpen the skills necessary for working with people.

PSYC 306 Psychopathology: Critical Perspectives **3 credits**

This course will describe and critically evaluate various systems for the diagnosis, formulation and assessment of psychopathology in psychiatry and clinical psychology. The course will provide an overview of various conceptions of psychopathology, mental illness, harmful internal dysfunction, deviance and social oppression, describe historical perspectives on psychopathology, and examine quantitative and qualitative research methods for the study of psychopathology. The course will also examine theoretical perspectives on psychopathology, including biological, psychoanalytic/psychodynamic, cognitive-behavioral, humanistic, multicultural and social justice, consumer and service-user, and systems perspectives. The course will also examine and evaluate various diagnostics nosology's, including the DSM, ICD, Psychodynamic Diagnostic Manual (PDM), Research Domain Criteria (RDoC) , and Hierarchical Taxonomy of Psychopathology (HiTOP). This course is designed primarily for majors in psychology. Non-majors and minors in psych may only take this course with permission, though PSYC 204 is recommended instead.

PSYC 313 Critical Social Psychology **3 credits**

Social behavior as a function of attitudes, perceptions and motivation; individual and interpersonal cultural factors in social behavior, racial relations, group morale and communications.

PSYC 316 Existential and Phenomenological Psychology **3 credits**

The origins of existentialism and the phenomenological method. The existential perspective of the implications of theory and methodology for a human science. Emphasis on the significance of existential phenomenology for research. Dual listed as PHIL 316.

PSYC 317 Psychology of Adolescence **3 credits**

The physical, emotional, social and intellectual development of the adolescent with emphasis on beliefs, feelings, thoughts and overt behavior.

PSYC 318 Music and Psychological Life **3 credits**

This course will seek to discover and interpret our psycho-social lives within the content of music and lyrics. Each work analyzed will feature a different psychological issue and perspective by which the music/lyric will be analyzed. Students will learn to apply psychological theory for the interpretation of musical expression.

PSYC 319 Psychology of Consciousness **3 credits**

An in-depth study of the structure, capabilities and evolution of consciousness. Study of recent research on consciousness of space and time, abnormal and dream states and the construction of "standard" and "alternate" realities.

PSYC 320 Criminal Psychopathology **3 credits**

An in-depth study of the psychology of violent serial criminal offenders. Emphasis on the techniques of criminal profiling and the usefulness of psychological research and findings for criminal investigations, interviewing of suspects, trial strategy, and treatment of offenders, victims, and law enforcement personnel.

PSYC 321 Happiness, Well-Being and Human Strengths **3 credits**

Students will be provided with a broad overview of the field of positive psychology, which is concerned primarily with human happiness, well-being, and human strengths. Positive Psychology stands in contrast to general psychology, which compares the individual to the average or norm, and it also stands in contrast to abnormal psychology, which has as its focus those individuals who suffer as a result of maladaptive behavior. In contrast, positive psychology is interested in the factors that make people not just ordinary, but extraordinary. Rather than a study of mental illness or mental normality, positive psychology is the study of human flourishing.

PSYC 323 Indigenous Psychology **3 credits**

Indigenous psychology is the study of human behavior and mental processes as they are understood from within the contextual frame of a particular culture, in contrast to approaches to psychology in which concepts are exported from one culture to another, different cultural context. This course will examine how theories, concepts, and methods of indigenous psychology have been developed, which account for local ecological, historical, philosophical, and religious perspectives of the people who are being studied.

PSYC 325 Horror, Anxiety and the Uncanny **3 credits**

This class will explore the concepts of horror and anxiety using psychodynamic, existential and psychological theories. This class will examine what makes something "horrific" and why there is such fascination around what is disturbing to us. Topics covered in this class include the physiological and psychological mechanisms of fear, existential anxiety and dread, the abject, and historical, social factors and personality factors that influence what we find to be scary or anxiety provoking.

These topics will be elucidated with the use of popular media and literature.

PSYC 348 Psychology of Diversity **3 credits**

This course is a seminar for psychology and behavioral sciences students to strengthen their multicultural awareness, knowledge, and skills in working with diverse client populations. The course will help students to understand the role of diverse social identities in the development of mental and physical health and well-being. Students will strengthen their understanding of how oppression and discrimination affect individual clients and communities. This course will also cover content related to how culture may affect psychological processes, mental health concerns and help seeking behaviors.

PSYC 350 Community Psychology **3 credits**

Students will be introduced to a foundational understanding of community psychology and its applications. The course will examine how community factors can influence personal well-being and mental health, and will identify how community psychology, as a preventative, strength-based approach to well-being, uses interventions to improve well-being in communities.

PSYC 352 Research Methodology in Human Sciences **3 credits**

Emphasis is on understanding the use of methodology, experimental controls, data analysis and scientific communication in psychological and sociological research. Dual listed as SOCW 352.

PSYC 365 Children's Mental Health **3 credits**

This course will introduce students to a variety of models of children's mental health and illness including societal, medical, psychoanalytic and humanistic models. We will explore diagnoses that are common in childhood and adolescence such as attentional and learning difficulties, autistic spectrum disorders, depression, anxiety, and eating disorders.

PSYC 366 Conspiracy Theory **3 credits**

This course will survey the philosophical, psychological, technological, and historical conditions (and changes) which give rise to our current infatuation with, and dire desire to refute, perceived conspiratorial thinking. The class will look at shifts in our social world, specific philosophical movements, growing relational and political alienation, the accelerant of technology, and a host of other factors which contribute to the supposed crisis of shared truth that we are now experiencing nationally and interpersonally.

PSYC 412 Senior Thesis **3 credits**

Independent research and study for experience in sophisticated methodology and interpretation of the results of research. Dual listed as SOCW 412. Writing-in-disciplines class. Prerequisite: Senior Standing.

PSYC 418 Psychology of Adult Development **3 credits**

A study of the dynamic continuation of psychological development beyond childhood and adolescence.

PSYC 455, PSYC 456 Institutional Practicum I, II **3 credits**

Experience working in a Pittsburgh area institution under professional supervision. Prerequisite: Senior standing. By application.

PSYC 295, PSYC 395, PSYC 495 Special Topics in Psychology I, II, III **1-6 credits**

PSYC 296, PSYC 396, PSYC 496 Independent Study in Psychology I, II, III **1-6 credits**

SJS – SOCIAL JUSTICE STUDIES

SJS 101 Foundations in Social Justice Studies **3 credits**

This course introduces students to ideas of social justice. A broad overview of conceptualizations of social justice, including distributive justice (equity), deliberative justice (democracy), and redistributive justice (difference), will intersect with critical analyses of the major theoretical approaches to social justice, namely, liberalism, Marxism, and post-structuralism. Students will then apply their conceptual and theoretical understandings of social justice to a series of case studies.

SJS 150 Introduction to Cultural Anthropology **3 credits**

Anthropology is the pursuit of the understanding of human existence in all its manifold complexity and, therefore, is subdivided into four subfields: Archaeology, Physical Anthropology, Linguistics and Cultural Anthropology. This class

draws on the insight from all four and focuses on the latter, which is concerned with the analysis and understanding of contemporary human experience.

SJS 175 Intro to Human Geography 3 credits

This course introduces students to the fundamental concepts of human geography. The course thus examines the ways in which social life intersects with, produces, and is produced by various places, spaces, territories, locations, borders, landscapes, and scales. Students explore a broad range of geographies from across the world, paying considerable attention to the ways in which social inequalities work through and are reinforced by different geographic patterns. The course also serves to introduce students to some of the key sub-disciplines of human geography, including urban geography, economic geography, and political geography.

SJS 200 Understanding Injustice I 3 credits

An intensive analysis of a facet of understanding injustice and its re/creation locally, nationally, and/or globally. Topics may vary by semester.

SJS 201 Articulating Social Justice I 3 credits

An investigation of a single means by which individuals and groups express and/or enact social justice, locally, nationally, and/or globally. Topics may vary by semester.

SJS 202 Organizing and Advocacy I 3 credits

This course will allow students to explore a set of tools used to organize social justice campaigns and advocate for a social justice cause. Topics may vary by semester.

SJS 203 Direct Practice I 3 credits

This course will allow students to explore and apply a set of direct practice tools in the pursuit of social justice. Topics may vary by semester.

SJS 205 Economic Geography 3 credits

This class surveys an array of approaches geographers us to study the spatiality of economic activity, from the motions of various workers to the locational choices of multinational corporations. It offers a critical analysis of the geography of the contemporary economy as it operates in our daily lives and the world beyond us. Focusing on the way that components of the economy move-geographically, historically, qualitatively, and quantitatively- from the sphere of production to those of exchange, consumption, distribution, reproduction, and back to production, the course uncovers the manner in which the economy is inherently geographical.

SJS 222 The Anthropology of Money 3 credits

This course surveys the contemporary and historical uses of money as a human project from basic systems of reciprocity to the evolving forms of virtual currency. Drawing on the depth and breadth of anthropological investigation into human economic practices. This course interrogates the myriad forms that currency takes in the current moment as well as exploring the important historical relationship between the advent of money as a human "thought technology “and the rise of social complexity, hierarchy and inequality.

SJS 225 Intro to Grant-Writing 3 credits

This Course will introduce students to the craft of professional grant-writing for fields such as the arts, social justice initiate, the sciences, education, and other non-profit work. Students will learn how to identify funding opportunities, calculate a budget of projected expenses, and write key sections of grant proposals. The course will introduce successful grant-writing practices at the foundation and corporate levels and provide a general view of government grant practices. Prerequisites: ENGL 101

SJS 240 The South African Anti-Apartheid Movement 3 credits

This course explores the political geographies of South Africa from the establishment of apartheid in 1948 to the present post-apartheid age. Students will examine geographic studies and primary source material to discover the ways in which various global processes have woven their way into South Africa’s landscapes over the past seventy years, and in turn, how South Africa's political geographies have impacted global markets, politics, and practices. The first half of the course will take a detailed look at how the white-minority South African government geographically implemented and maintained apartheid according to a colonial logic of racial capitalism. The second half of the course will focus upon ways in which South Africans , Africans in neighboring states, and the broader international community organized to resist, and eventually end, apartheid. The course will thus serve as an historical case study of a relatively successful organizing and advocacy campaign for social justice.

SJS 300 Understanding Injustice II **3 credits**

An intensive analysis of multiple facets of understanding injustice and its re/creation locally, nationally, and/or globally. Topics vary by semester. **Prerequisite**: SJS 150 or SJS 175 and SJS 101.

SJS 301 Articulating Social Justice II **3 credits**

An investigation of several means by which individuals and groups express and/or enact social justice, locally, nationally, and/or globally. Topics may vary by semester. **Prerequisite:** SJS 150 or SJS 175 and SJS 101.

SJS 302 Organizing and Advocacy II **3 credits**

This advanced course will allow students to explore and apply a set of tools used to organize social justice campaigns and advocate for a social justice cause. Topic may vary by semester. **Prerequisites** :SJS 202 or CENG 250.

SJS 303 Direct Practice II **3 credits**

This advanced course will allow students to explore and apply a set of direct practice tools in the pursuit of social justice. Topics may vary by semester.

SJS 325 Global Political Economy **3 credits**

This course will survey and investigate the sociocultural dimensions of global political economy, as a comprehensive and systematic approach to understanding of the roots of many of the world's dynamics of inequality. In the process we will interrogate the , analytically distinct but practically intertwined , historical processes associated with the Enlightenment, (European) colonialism, and capitalism, as well as their profound and lasting repercussions on the contemporary world. **Prerequisite:** SJS 150 or SJS 175

SJS 350 Advanced Social Theory **3 credits**

The readings and discussion in this course will survey the history of the Western tradition of social theory. Special focus will be on the 20th century schools of thought, e.g. Existentialism, Neo/Marxism, Structuralism, Post-Structuralism, etc. **Prerequisite**: SJS 101, SJS 150, or SJS 175.

SJS 370 Global Social Justice **3 credits**

This course introduces students to the emergent field of global social justice. A broad overview of conceptualizations of social justice, political, legal, educational, and economic systems, will be analyzed, including notions of equity, theoretical approaches to social justice, liberalism, neoliberalism, and post-structuralism around the world. An understanding of such concepts and systems requires a sound foundation of ethical values with which students will explore, the application of the theory to practice. Student's will then apply their conceptual and theoretical understandings of social justice to a series of case studies, and develop models that are innovative. **Prerequisite:** SJS 101, SJS 150, or SJS 175.

SJS 400 Social Justice and Community Research **3 credits**

Community based participatory research (CBPR) is a research approach that has a strong commitment to social justice. It unites communities and researchers in the collective goal of addressing community-identified needs through a process of sharing power, nurturing co-learning, augmenting assets and ultimately strengthening community capacity. This course will cover theories, principles and strategies of CBPR. It also addresses CBPR's advantages and limitations, the ethics of CBPR, and the necessary skills for taking part in CBPR projects. **Prerequisite:** SJS 101

SJS 405 Social Justice Senior Thesis Capstone **3 credits**

The capstone course for the Social Justice Studies major will allow students to conduct original research and write a thesis on a relevant social justice topic. The research will draw from the work the students completed in their SJS 400 Social Justice and Community Research course. The thesis may also be rooted in the student's practicum experience (SJS 401). Under the guidance of a faculty supervisor, students will collect and analyze data, and write an 8,500-9,500-word thesis in the format of a peer-reviewed journal article. Upon completion of at least a full draft of the thesis, the students will orally present their research in a public forum(e.g., student symposium or other classroom or conference setting). **Prerequisites:** SJS 101 and SJS 400

SOC – SOCIOLOGY

SOC 111 World Cultures **3 credits**

The course serves as an introduction to studying cultural changes form an interdisciplinary, global perspective. Students will consider diverse ways of being, finding meaning, and assigning value that exist in human communities. Common processes and themes of cultural change around the world will be explored.

SOC 150 Sociological Foundations **3 credits**

This course introduces students to the main concepts, theories, and methods of the discipline of sociology. Subject matter will include the relationship between the individual and social groups, social institutions, culture, and the social environment. Students will consider how the intersection of social identity, categories (race, ethnicity, class/socioeconomic status, gender, sexuality, religion, and ability status) may impact individual development, with an emphasis on power, privilege, and access to resources in society. Content related to human diversity and social inequality will be a substantial element of this course

SOC 175 Introduction to Global Cultural Studies **3 credits**

An introduction to the critical analysis of contemporary global cultural circumstances with special emphasis on developing an appreciation of the complex character of human cultural patterns the world over as well as a global perspective on the dynamics of power and privilege. Dual-listed with GCS 175.

SOC 203 Spaceship Earth: Introduction to Environmental Studies **3 credits**

Global warming, the latest deadly virus rapidly spreading around the world, plastic islands in the middle of the world's oceans, massive extinctions of plant and animal species-ecological collapse appears to be in our midst. In this introduction to environmental studies, students explore social scientific approaches to studying not only on nature but also society. Multiple and conflicting perspectives on the relationship between nature and society are studied through case studies and experimental activities.

SOC 205 Social Inequality in America **3 credits**

An examination of prestige categories, economic stratification, power structures, social mobility and social class. Conflicts deriving from these social conditions are studied. Prerequisite: SOC 150.

SOC/MLNG 260 Japanese Culture **3 credits**

A study of the culture of Japan with special emphasis on the historical development and underlying dynamics of the Japanese world view. Education, child-rearing, business practices, morality, relationships, language, and the arts will be explained.

SOC/HIST 263 World History: Central and South America **3 credits**

The development of the political, economic, social and cultural history of Latin America since the revolution for independence. Prerequisites: HIST 203, HIST 204; or permission.

SOC 301 Theories of Sociology **3 credits**

This course is a seminar to develop an understanding of, and skills in, sociological theory. In this course students will examine theories that address the greatest social problems of our times(and the times in which the theories emerged). These theories include contemporary theories-for example, on the question of the relationship between nature and society-as well as classical theories of Karl Marx, Max Weber, and Emile Durkheim.

SOC 308 American Ethnic Groups **3 credits**

A study of the cultural values of selected American ethnic groups and their interaction with the dominant American society. Prerequisite: SOC 150.

SOC 315 Modern World Systems **3 credits**

A study of the ongoing dynamics of the Modern era (15th Century to present) that have fostered the emergence of the current world system; particular attention will be paid to the contemporary character of our "globalizing" world, including such aspects as the increasing global division of labor, neoliberalization, corporatization, etc.

SOC 335 Revolutions **3 credits**

This course focuses on "revolutions" as globalizing forces in human history; it begins with a discussion of the European Enlightenment and the Industrial Revolutions and proceeds through the American and French revolutions to the Bolshevik

Revolution incorporating ancillary "revolutions" along the way, including discussions of some or all of the following: European colonial expansion, the Bolivarian liberation, Fordist production, consumerism, Viet Nam, post industrialization/post-Fordism, postmodernity, neoliberalism, etc. Prerequisite: GCS 175.

SOC 356 Global Social Change **3 credits**

Society is consistently changing, in planned and unplanned ways. This seminar course is devoted to the intensive study of a social change topic(such as agriculture and food systems, sustainable development). Using the tools of sociology, students will develop an understanding of a large scale social change topic globally. Student learning will culminate in a research proposal and/or paper. Topics may vary by semester.

SOC 415 Women: Historical and Global Perspective **3 credits**

What roles and functions do women have in the global arena? Although not a minority, women are still, for the most part, disempowered. The course will explore the position of women - globally - from historical, socio-political, psychological, literary, as well as economic perspectives. Understanding issues such as misogyny and family values will be analyzed in the context of the specific institutions that promote such trends. Dual listed as ENGL 415.

SOC 497, SOC 498 Honors Seminar in Human Sciences I, II **3 credits**

Various topics, pursued in depth, chosen at the discretion of the department. Dual listed as PSYC 497, PSYC 498. Prerequisite: Permission.

SOC 194, SOC 294 Special Topics **3 credits**

SOC 295, SOC 395, SOC 495 Special Topics in Sociology I, II, III **1-6 credits**

SOC 296, SOC 396, SOC 496 Independent Study in Sociology I, II, III **1-6 credits**

SOCW – SOCIAL WORK

SOCW 105 Marriage and the Family **3 credits**

Sociological perspectives on premarital, marital and familial relationships including mate selection, sexuality and sex roles, legal and economic aspects of marriage, growth and conflict, parenthood and marital dissolution.

SOCW 202 Social Issues **3 credits**

An in-depth discussion of selected issues that have a fundamental impact on the social world. Emphasis on the analysis of social problems and the development of possible approaches to them.

SOCW 221 Introduction to Social Work **3 credits**

A general introduction to the goals, problems, practices and procedures of social work.

SOCW 241 LGBTQ Mental Health **3 credits**

This interdisciplinary course provides foundational knowledge and general practice skills for lesbian, gay, bisexual, transgender, and questioning/queer (LGBT) individuals and communities. The course content will include an examination of historical and political perspectives, with an emphasis on contemporary mental health concerns and the psychological impact of stigma and discrimination against members of an LGBTQ communities. Social, psychological, cultural, behavioral, environmental, and biological factors contributing to health and mental health disparities among LGBTQ individuals and communities will be highlighted. Students will also explore ethical and legal issues and debates through the lens of psychology, psychiatry, and social work. Dual listed as PSYC 241.

SOCW 309 Sociology of the African-American Experience **3 credits**

An exploration of the history of people of African descent in America. Considers African-American relationships with social institutions and their effects relative to child development, education, politics, economics and family structure.

SOCW 326 Social Welfare Policy **3 credits**

A study of local, state and federal social service and mental health organizations and agencies. Emphasis on services provided, referral procedures and inter-relationships of various agencies.

SOCW 350 Sex, Gender, and Identity Politics **3 credits**

This survey course is designed for psychology and behavioral sciences major to understand human sexuality, gender, and gender identities, and the role these play in social interaction and public policy. The course will begin with an analysis of current intersectional movements and the social systems and policies they push against. Next, the class will analyze the social construction of the human body and its reproductive capacity. Working through history, the course will then theorize a trajectory of sexuality and gender identity in America today. Students will strengthen their understanding of how oppression, discrimination and violence follow particular issues of sexuality and gender.

SOCW 352 Research Methodology **3 credits**

Emphasis is on understanding the use of methodology, experimental controls, data analysis and scientific communication in psychological and sociological research. Dual listed as PSYC 352.

SOCW 412 Senior Thesis **3 credits**

Independent research and study for experience in sophisticated methodology and interpretation of the results of research. Dual listed as PSYC 412. Writing-in-disciplines class. Prerequisite: Senior Standing.

SOCW 194, SOCW 294 Special Topics **3 credits**

SOCW 295, SOCW 395 Special Topics in Social Work I, II **1-6 credits**

SPAN – SPANISH

SPAN 101 Elementary Spanish I **3 credits**

An introduction to the Spanish language and Hispanic culture through conversation and basic grammar.

SPAN 102 Elementary Spanish II **3 credits**

A continuation of SPAN 101. Prerequisite: SPAN 101.

SPAN 201 Intermediate Spanish I/Translation **3 credits**

Reading and translation of various modern Spanish texts. Prerequisite: SPAN 102.

SPAN 202 Intermediate Spanish II/Conversation **3 credits**

Development of conversational fluency and practical composition. Prerequisite: SPAN 102.

SPAN 216 Spanish Culture **3 credits**

An introduction to Spanish culture and history from the medieval era to the present. Selected historical and literary texts are used to give a panoramic view of Spanish culture. Presented in English. Prerequisite: History 150 or permission of the instructor. Dual listed as HIST 216.

SPAN 303 Spanish-American Literature **3 credits**

A survey of Spanish-American literature from its origins to the present. Prerequisite: SPAN 201 or permission.

SPAN 194, SPAN 294 Special Topics **3 credits**

SPAN 295, SPAN 395, SPAN 495
Special Topics in Spanish I, II, III **1-6 credits**

SPAN 296, SPAN 396, SPAN 496
Independent Study in Spanish I, II, III **1-6 credits**

TE – TECHNICAL ENGINEERING

TE 101 Introduction to Theatrical Engineering 3 credits

Introduction to the practice of engineering in entertainment and performance settings. Survey of common software used in the profession with an emphasis on programming and computation. Consideration of artistic, legal, and ethical issues and discussion of career opportunities. Practice in oral and written communication of technical material. Classroom study will be enhanced by guest speakers and field trips

TE 401 Professional Practice in Theatrical Engineering I 3 credits

Consideration of legal, ethical, social, and economic factors in engineering practice. Use of effective oral and written communication techniques in the workplace. Application of project management tools including proposals, progress reports, and design reviews. Students, working in teams, propose engineering design projects to meet current needs in the entertainment and performance industry. By the of the term, each team's proposal must be accepted by the project supervisor. Prerequisites: PROD 226, PROD 227, PROD 229, 12 credits of engineering major courses at the 300, 400 level.

TE 402 Professional Practice in Theatrical Engineering II 3 credits

Continuation of TE 401. Student teams complete the projects proposed in TE 401 in a collaborative, professional atmosphere using management tools such as engineering notebooks, progress reports, and design reviews. By the end of the term, each team must document and deliver the product described in its proposal. Prerequisites: TE 401

UNIV – UNIVERSITY EXPERIENCE

UNIV 101 City-University Life 3 credits

This course introduces students to the kinds of communities that people construct for themselves (e.g. social, political, artistic, etc.) and the values and dynamics that define such communities (e.g. cooperation, civility, tolerance, responsibility, etc.). The notion of what it means to be a responsible member of the "community" will actively be explored and discussed by engagement and analysis of multiple communities: the classroom community, the Point Park University community, and the Pittsburgh community. Students will also examine the responsibilities they have to their personal academic development.

UNIV 102 University and Community Life 3 credits

This course introduces students to the kinds of communities that people construct for themselves (e.g. social, political, artistic, etc.), explores how those communities are defined, and analyzes the values and dynamics that define online and on-ground communities. The notion of what it means to be a responsible member of the "community" will actively be explored and discussed through engagement and analysis of multiple communities including the online classroom community and the Point Park University community. Students will also begin to develop research skills, and analyze and create texts with attention to audience and purpose.