

Undergraduate and Graduate  
Catalog 2020–2021  
Course Descriptions

Lebanon Valley College

## UNDERGRADUATE COURSES

**ACT 131.Fundamentals of Accounting and Financial Statement Analysis.** This course will provide students with an introduction to the fundamentals of the accounting system, basic financial statements, and SEC filings. You will learn how transactions get recorded in a business' financial records and become familiar with the concept of footnote disclosures. You will evaluate and analyze how financial statements are used by stakeholders and how information contained therein is collected. 3 credits.

**ACT 151.Financial Accounting.** Basic concepts of accounting including: accounting for business transactions, preparation and use of financial statements, and measurement of owners' equity. Restricted to Accounting, Actuarial Science, & Analytical Finance majors. 3 credits.

**ACT 180.Business Applications in Excel and Access.** An extensive intermediate to advanced presentation of applications of Excel spreadsheets, graphing, and programming, as well as applications of Access database tools. This course will focus on hands-on learning and will prepare students for future courses within the Department of Business and Economics. 3 credits. [This course is cross-listed with BUS 180]

**ACT 231.Managerial Accounting.** Cost-volume-profit relationships, cost analysis, business segment contribution, profit planning and budgeting as a basis for managerial decision-making. Prerequisite: ACT 131 or ACT 151, with a minimum grade of C- or better. 3 credits.

**ACT 251.Intermediate Accounting I.** Study of the theory and development of generally accepted accounting principles as they relate to financial reporting; the application of these principles to the preparation of financial statements; special emphasis on revenue recognition as well as valuation, classification and disclosure of current and long-term assets. Prerequisite: ACT 131 or 151.3 credits.

**ACT 252.Intermediate Accounting II.** Study of the application of accounting principles for current liabilities, long-term liabilities, stockholder's equity, earnings per share, dilution, pensions, leases, cash flows, deferred taxes, investments including the analysis of financial statements. Prerequisite: ACT 251 with a minimum grade of C- or better. 3 credits.

**ACT 263. Cost Accounting I.** This is the first of a two-course sequence examining the role of financial information inside the business. These courses will emphasize the role accounting plays as a business partner in the managerial decisions of the company. This course will focus on the creation and analysis of financial reports. Topics will include cost objects, cost behaviors, costing methods, and cost/volume/profit analysis. Prerequisite: ACT 151 with a C- or better. 3 credits.

**ACT 342.Government and Non-Profit Accounting.** Basic concepts of fund and budgetary accounting used for financial activities of governmental units and not-for-profit organizations. Prerequisite: ACT 251.3 credits.

**ACT 359. Advanced Accounting.** The emphasis of this course is on business combinations and consolidated financial statements. The course also addresses accounting principles applicable to partnerships, SEC reporting, insolvency, and fiduciaries. Prerequisite: ACT 252.3 credits.

**ACT 363. Cost Accounting II.** This is the second of a two-course sequence examining the role of financial information inside the business. These courses will emphasize the role accounting plays as a business partner in the managerial decisions of the company. This course will focus on the creation and analysis of financial reports. Topics will include budgeting, variance analysis, joint and product costing, activity-based costing and just-in-time. Prerequisite: ACT 263 with a C- or better. 3 credits.

**ACT 371.Individual Income Tax.** Analysis of the federal income tax laws as applied to individuals; case problems, preparation of returns. Prerequisite: ACT 162, 231, or 251.3 credits.

**ACT 380.Case Studies and Readings in Accounting.** In this course, students will develop an in-depth understanding of more specialized financial accounting topics including deferred taxes, pensions, post-retirement benefits, leases, full disclosure, and the cash flow statement. In addition, case studies are used to provide more complex and unstructured situations for analysis. The course also includes a QuickBooks component to develop skills with one of the more popular accounting software systems for small business. A common reading is used to expand interpersonal, social, and communications skills. Prerequisite: ACT 251, and 252.3 credits.

**ACT 400.Internship.** Practical and professional work experience related to the student's career interests, involving both on-site and faculty supervision. Internship credit does not fulfill required electives in the major. Graded pass/fail. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: 2.75 GPA, permission of the chairperson, completion of department's application form. Generally limited to juniors and seniors. 1-12 credits.

**ACT 455. Auditing.** A study of the process of evaluation of internal controls and interpretation of financial information to permit an auditor to express a professional opinion on financial reports. Prerequisite: ACT 252.3 credits.

**ACT 472.Entity Taxation.** Analysis of the federal income tax laws as applied to corporations, partnerships and fiduciaries; case preparation of returns. Prerequisite: ACT 371.3 credits.

**ACT 480.Accounting Information Systems.** This course provides an introduction to information systems for accounting students to provide them with an understanding of key concepts that they will need to be successful in their careers in using and helping to purchase or build accounting information systems. Prerequisite: BUS 130, BUS 160, and ACT 251; junior or senior standing or by permission of the instructor. 3 credits.

**ACT 485. Accounting Practice: Capstone.** This course provides hands on practice in forming and operating an academic accounting firm. Students will gain experience interfacing with "business" clients by seeking accounting engagements with the business teams in BUS 485. Students will operate the firm by filling roles at various levels within the firm, performing conflict checks, providing accounting guidance, and holding firm meetings. Students will reflect on past experiences within Constellation LVC and how that coursework provided skills necessary for success in the accounting profession, leading to the creation of an intellectual autobiography and interdisciplinary course projects. Prerequisite: ACT 251, ACT 252, ACT 263 or by permission of the instructor. 3 credits.

**AMP 151.Audio Engineering I.** The only way to learn engineering and studio production is to dive in and see how it works. You will engineer tracking and mixing projects as you learn the fundamentals of recording systems - concepts and techniques of console operation, signal flow, session procedures, and signal processors. 3 credits.

**AMP 152.Audio Engineering II.** This semester we dig deeper and work on more complex console operations and studio production techniques. You will learn more about microphone design and technique, signal processing, and audio theory. Got ears? You will continue developing critical listening skills that are crucial for audio engineers. Prerequisite: AMP 151.3 credits.

**AMP 251.Tonmeister Recording.** How do you record an orchestra, or a choral ensemble, or string quartet? The Tonmeister approach emphasizes engineering and musical skills by considering room acoustics, musical genres, microphone technique, and methods for on-location recording in order to effectively capture an acoustic performance in a concert hall. Prerequisite: AMP 152.1 credit.

**AMP 252.Audio for Digital Media.** There are many applications for audio production beyond making records. We will produce podcasts, post audio for video, experiment with surround, and explore how sound is used for themed entertainment (theme parks, shows, etc.) Along the way, you will learn the nuts and bolts of how digital audio systems work. Prerequisite: AMP 251, or permission of the instructor. 3 credits.

**AMP 254. Systems Design & Integration.** Somebody has to design, install, and maintain the complex audio systems used in the industry. You will learn about system design for sound reinforcement, cabling and interfacing for recording studios, basic troubleshooting and electronics, tests and measurements, and other behind-the-gear issues. Prerequisite: AMP 152 and 252.3 credits.

**AMP 351.Audio Mastering.** A mastering engineer takes a completed mix project and tweaks it to perfection using very sophisticated signal processing and a highly developed critical ear. Learn the techniques from a professional mastering engineer who will guide you through the process of learning how to apply the tools while developing your listening skills. Prerequisite: AMP 152 and 252; restricted to AMP majors only. 3 credits.

**AMP 352.Electronic Music.** This course is an exploration of electronic music. Subjects covered include the appreciation and knowledge of electronic music pioneers, MIDI composition, MIDI theory, sound design, synthesis, sampling, sound for video, and studio production integration. Primary software taught is Avid Pro Tools. Prerequisite: AMP 351.3 credits.

**AMP 400.Internship.** All AMP majors complete an internship with a company focused in the audio/recording industry. Internships can be taken after completing all junior level class requirements. Internships are offered the senior spring semester or the summer before the senior year. If all coursework is completed, a 12-credit, full-time internship can be pursued, allowing students to relocate for the term. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: All junior level AMP degree classes, and approval of the internship director and advisor; restricted to AMP majors only. 3-12 credits.

**AMP 451.Game Audio.** Engineering audio for video games involves a different approach than making a record or film. Artistic and technical sound design and workflow processes are highly complex and detailed. We will be learning how to use game development software to build audio content for actual game environments. 3 credits.

**AMP 452.Concert Systems and Commercial Audio.** The field of sound reinforcement and distribution has undergone extensive development in recent years. Research into sound propagation and advances in digital signal processing are employed in highly refined system designs for live concerts and permanent installations. This course will examine various system technologies and applications in use today. Practical issues and challenges related to integrating audio into complex situations will be discussed. Prerequisite: AMP 254. 3 credits.

**AMP 453. Music Production & Engineering.** In this capstone course, you will apply everything you have learned to produce a quality recording for an off-campus "client". You will wear the hats of producer and chief engineer as you learn new techniques, refine the ones you already know, and deal with issues such as musicality, client relations, engineering, organization, and time constraints. Guided by a professional engineer with extensive experience, this course allows you to pull out all the stops to see what you can do. Prerequisite: AMP 352, or permission of the instructor; restricted to AMP majors only. 3 credits.

**ART 110.Creative Studio.** Explore the art-making process while addressing contemporary topics of cultural and social relevance. In Creative Studio, you will experiment with materials, develop meaningful ideas, and refine your analytical and visualization skills through the power of artistic creation. Not linked to a specific medium or technique, Creative Studio is a non-traditional course for the independent and expressive student. In this course you will learn about the global contemporary art world, transform an old book into a one-of-a-kind artist's book, develop ambitious studio projects, and learn how to install your art as part of a class exhibition. Fulfills requirement: Intercultural Competence. 3 credits.

**ART 200.Ceramics Studio.** This course provides an intensive exploration of the ceramics medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course may be repeated for credit as topic changes. This course has a \$100.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 205. Drawing Studio.** This course provides an intensive exploration of the drawing medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course has a \$50.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 210.Painting Studio.** This course provides an intensive exploration of the painting medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course has a \$100.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 215. Photography Studio.** This course provides an intensive exploration of the photography medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course has a \$50.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 220.Printmaking Studio.** This course provides an intensive exploration of the printmaking medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage

in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course may be repeated for credit as topic changes. This course has a \$100.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 225. Sculpture Studio.** This course provides an intensive exploration of the sculpture medium through specific topics that vary from year to year. Topics may be thematic or focus on a particular technical aspect of the medium, providing students with unique opportunities to engage in a variety of methods and concepts. Each offering will bear a specific subtitle indicating the content to be presented. This course has a \$100.00 studio fee. Fulfills requirement: Immersive Experience. 3 credits.

**ART 230. Portfolio & Publishing Studio.** This course introduces media and design skills for students seeking career paths in the art and culture industries. Emphasizing computer applications needed for portfolio building and professional work in galleries and museums, the course provides students with training and development guidance for employment and graduate opportunities. Students will also acquire a more pronounced understanding of the global art world and its impact on culture and the economy. Fulfills requirement: Immersive Experience. 3 credits.

**ART 250. Architecture Studio.** From the great monuments of the world to the most humble domestic dwellings, architecture shapes cultural values and national identities. Beyond the pragmatic needs for shelter and defense, architectural structures communicate a variety of human needs ranging from a desire to memorialize to a will to propagandize. By studying architectural form across time, we gain an insight into cultural differences and universalities that underline all built environments. Students will investigate the stylistic evolution, the structural solutions, and the spatial strategies that architects have employed to shape our experience of the world. Fulfills requirement: Intercultural Competence. 3 credits.

**ART 260. The Photograph.** This course explores the role of photography as an art form, as a tool for communication and storytelling, and as a medium of realism that is increasingly called upon for verification within the society. In providing a history of the photograph from its origins in the early nineteenth century to the digital age, the course grapples with the compelling nature of the photograph as a carrier of potent meaning. Students will examine the use of photography for portraiture, landscape and architecture, social documentary, and scientific research while gaining an understanding of the stylistic shifts in the medium in relation to cultural aesthetics. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**ART 265. Color & Film.** Color is central to our visual perception of the world, and throughout human history artistic representations have relied on color to tell stories and preserve memories. Today we take it for granted that nearly all visual media is produced in color and that, through the power of digital filters, we can easily manipulate the color of our own images. Yet in the history of film, color was not widely used until the 1970s - and many of the most critically acclaimed works of film were created in black-and-white. Color & Film explores the history of film color through the technological and artistic origins of moving pictures, the establishment of film aesthetics, and the symbolic use of color (and non-color) as distinguishing characteristics of films as art and entertainment. Fulfills requirement: Critical Thinking through Writing. Note: Cannot take course if taken or in-progress of ART 332.3 credits.

**ART 270. Art Therapy Practicum.** This practicum will allow students to apply art therapy techniques on-site in various healthcare settings while being mentored by faculty and professionals. Students will be introduced to healthcare best practices, patient needs, and the scope of therapeutic services in the industry. Students will learn active and empathetic listening, promote creative interactions as a way to develop personal growth, and encourage self-exploration and self-discovery in a variety of patients. Students will learn the activity-based interventions to address patients with illnesses and disabilities, as a means to support mental and physical health, recovery and wellness. This practicum will allow you to apply art therapy techniques on-site in various healthcare setting while being mentored by faculty and professionals. You will be introduced to healthcare best practices, patient needs, and the scope of therapeutic services in the industry. You will learn active and empathetic listening, promote creative interactions as way to develop personal growth, and encourage self-exploration and self-discovery in a variety of patients. You will learn the activity-based interventions to address patients with illnesses and disabilities, as a means to support mental and physical health, recovery and wellness. Prerequisite: ART-110 or ART-205, or permission of the instructor. 1 credit.

**ART 370. Museum Studies.** Do you have a deep and enduring interest in museums? Are you curious about how a museum operates? This course is intended for students interested in all types of museums including art, history, science, and social issues. By introducing students to the origins of museums and exploring the role museums have played in shaping history and knowledge, students will gain exposure to museology from a global perspective. Topics include the evolution of museum collections, methods of display, and the changing role of museums in reaching a broad spectrum of society. Museology also provides essential professional skills for students pursuing career or graduate opportunities in the museums or related fields including education, design, marketing, outreach, archiving, and conservation. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**ART 375. Curatorial Projects.** Exhibition making is an important practice because it allows us to display, examine, and theorize cultural objects within a gallery or museum environment. This course aims to familiarize students with the multifaceted tasks of curation. Students will experience both in the curatorial duties of working with acquisitions, collection management, and conservation, as well as the creative aspects of exhibition ideation. Students will articulate a rationale for an exhibition, identify objects appropriate to the exhibit's mission, secure loans, and plan spatial layouts for installation. The students will also become practiced in writing catalogs and wall text, and managing publications and marketing. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 3 credits.

**ART 380. Color & Culture.** How does color shape our understanding of the world? This is the center question of Color & Culture, a course in which we will investigate the powerful role that color has played throughout human history. With the history of art as a starting point, students will analyze the origins, uses, and interpretations of color from the earliest human cultures to the present, emphasizing the criteria by which color has been valued. These criteria incorporate a wide range of factors - aesthetic, biological, economic, religious and social - that have impacted culture in myriad ways and continue to influence our attitudes toward color. Fulfills requirement: Intercultural Competence. 3 credits.

**ART 400. Internship.** Internship in Art and Visual Culture. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**ART 440. Directed Practice.** This course provides the opportunity for students to develop and present a focused studio art project that builds upon established skills and concepts. Students work independently while receiving faculty guidance and evaluation on all aspects of the creative process, including the integration of research and the articulation of themes in written form. Majors and minors are required to take at least one

semester of Directed Practice, but students whose Professional Focus is in the Studio Arts are encouraged to undertake two or more semesters of independent work. This course has a \$100.00 studio fee. Fulfills requirement: Immersive Experience. Prerequisite: Limited to creative art majors. Complete at least two previous studio art courses, or by permission of the instructor. 3 credits.

**ASC 281. Probability for Risk Management.** This class provides an introduction to probability with a focus on applications to risk management in property/casualty and life insurance. We study fundamental concepts in general probability, counting problems, and probability distributions, both discrete and continuous, single-variable and multivariate. ASC 281 covers the material on SOA exam P - Probability. Prerequisite: MAS 112.3 credits.

**ASC 385. Mathematics of Finance.** This course is an introduction to interest theory (including applications) and fundamental financial instruments. Interest theory topics covered include time value of money, annuities, loans, bonds, project appraisal, portfolios, duration, immunization, swaps, and the term structure of interest rates. These ideas are then applied to study various financing and budgeting methods for corporations. ASC 385 covers the material on SOA exam FM - Financial Mathematics and is designed to meet the SOA standards for Validation through Educational Experience (VEE) in the area of corporate finance. Prerequisite: MAS 112 or MAS 162.3 credits. [This course is cross-listed with FIN 385]

**ASC 386. Financial Derivatives and Pricing.** In this class, we study financial models and their applications to risk management. The financial instruments section of the class focuses on the properties and uses of derivative products including calls, puts, forwards, and futures. Topics we address include parity, binomial pricing, the Black-Scholes model, hedging, exchange rates, and exotic options. The last part of the course looks at topics related to insurance and rate-making. ASC 386 combined with FIN 381 covers the material on SOA exam IFM - Investments and Financial Markets. Prerequisite: ASC 385 or FIN 385. 3 credits. [This course is cross-listed with FIN 386]

**ASC 472. Loss Distributions and Credibility Theory.** In this course, we study various loss models as well as the process of selecting, constructing, and evaluating a model when solving an actuarial problem. We cover frequency, severity, and aggregate models, some advanced statistics topics, and credibility. ASC 472 combined with ASC 386 and MAS 371 covers the material on SOA exam STAM - Short-Term Actuarial Mathematics. Prerequisite: MAS 371.3 credits.

**ASC 481. Mathematics of Life Contingencies I.** This is the first part of a two-semester study of contingent payment models from both theoretical and applied perspectives. We look at survival distributions, present value random variables, benefits, premiums, reserves, and profit testing. ASC 481 and 482 combined cover the material on SOA exam LTAM - Long-Term Actuarial Mathematics. Prerequisite: ASC 385; Corequisite: MAS 371.3 credits.

**ASC 482. Mathematics of Life Contingencies II.** This is the first part of a two-semester study of contingent payment models from both theoretical and applied perspectives. We look at survival distributions, present value random variables, benefits, premiums, reserves, and profit testing. ASC 481 and 482 combined cover the material on SOA exam LTAM - Long-Term Actuarial Mathematics. Prerequisites: ASC 481.3 credits.

**ATR 101. Introduction to Athletic Training.** The course is designed to introduce students to the historical development and current foundational principles of the profession of Athletic Training. Students will learn roles and responsibilities of an Athletic Trainer and how those differ and uniquely complement other healthcare professionals. This course will highlight commonly occurring orthopedic injuries as well as identify key prevention strategies to safeguard, when possible, physically active individuals from injuries and illnesses. The profession of Athletic Training is quickly evolving and as part of this course the organizational groups committed to advancing the profession will be discussed. The diverse settings that Athletic Trainers work in as well as the potential career opportunities will also be explored. Graded pass/fail. 1 credit.

**ATR 377. Study Abroad in China: Perspectives from Traditional Chinese Medicine.** This course is a 10-day study abroad program available to students enrolled in upper level Health Professions classes. Students will stay in Beijing, China at Beijing Sport University. While there, students will be taught aspects of Traditional Chinese Medicine (TCM) by Chinese faculty at the University in subjects such as cupping, acupuncture, Chinese massage, and TaiChi. During this time, students will be engaging socially with their Chinese peers at the University. In addition, students will tour local cultural sites such as the Great Wall, Forbidden City, and Tiananmen Square. The primary purpose of the class is to improve student's cultural competence an encounter alternative possibilities to western medicine in the areas of healthcare and wellness. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 1 credit. [This course is cross-listed with EXSC 677]

**BCMB 401. Molecular Biology.** Gene structure, function and regulation at the molecular level in prokaryotic and eukaryotic organisms. Recombinant DNA techniques (genetic engineering) and gene sequencing are covered in detail. Prerequisite: Three semesters of chemistry and BIO 201 or permission of the instructor. Corequisite: BCMB 401L. 4 credits.

**BCMB 421. Biochemistry I.** The study of the chemistry of the molecules of life. Topics covered include the applications of pH & buffers, amino acid chemistry, protein structure & function, the thermodynamics of protein folding, protein purification & analysis, ligand binding, enzyme mechanisms and enzyme kinetics. Prerequisites: CHM 214 and 216. 3 credits.

**BCMB 422. Biochemistry II.** The continued study of biomolecules, with an emphasis on the metabolism of carbohydrates and lipids. Topics covered included carbohydrate chemistry, coenzyme mechanisms, electron transport and oxidative phosphorylation, lipid chemistry, membranes and an introduction to amino acid metabolism. Overall, intermediary metabolism and its metabolic control is viewed from an integrated perspective. Prerequisites: CHM 214 and 216. 3 credits.

**BCMB 430. Biochemistry Laboratory.** Investigations of the properties and functions of proteins, nucleic acids, carbohydrates and lipids. Prerequisites: CHM 214 and 216. 1 credit.

**BCMB 499. Biochemistry Seminar.** Readings, discussions, and reports on special topics in biochemistry. 1 credit.

**BIO 111. General Biology I.** A rigorous study of basic biological principles, designed for science majors. Topics emphasized include basic biochemistry, cell biology, genetics, embryology, histology, and evolution. Corequisite: BIO 111L. 4 credits.

**BIO 112. General Biology II.** This course, also rigorous and designed for science majors, covers concepts in animal and plant physiology, botany, and ecology. Prerequisite: BIO 111/L. Corequisite: BIO 112L. 4 credits.

**BIO 201.Genetics.** A study of the principles, mechanisms and concepts of classical, molecular, and population genetics. The laboratory stresses key concepts of genetics utilizing both classical and molecular approaches. Laboratory exercises include analysis of nucleic acids, genetic crosses, and studies of bacteria and plasmids. Prerequisites: a C- (1.67) average in BIO 111/L and BIO 112/L; one year of chemistry or permission of the instructor. Corequisite: BIO 201L. 4 credits.

**BIO 203. Conservation Biology.** An introduction of the threats to genetic, organismal, and ecosystem diversity. The course begins with a discussion of biodiversity, population size, and ecosystem functioning. It then investigates the threats to biodiversity including habitat loss, pollution, invasive species, and climate change. Finally, the course will examine management and policy options that seek to preserve biodiversity. Prerequisite: A C- (1.67) average in BIO 111/L and BIO 112/L, or C- grade in ENVI-101/L. Corequisite: BIO 203L. 4 credits.

**BIO 212.Animal Behavior.** A study of the basic concepts of invertebrate and vertebrate behavior with emphasis on the development, genetics, physiology and evolution of behavior. Laboratory exercises include ethogram construction, avian foraging, aggressive display analysis, chemical communication, and spatial learning. Prerequisite: a C- (1.67) average in BIO 111 and BIO 112. Corequisite: BIO 212L. 4 credits.

**BIO 214. Biological Research Methods, Design and Statistics.** This course provides students with the foundational skills needed to conduct biological research. The course covers the application of the scientific method holistically through research from start to finish including writing research proposals, conducting literature searches, critiquing sources, experimental design, lab and field safety, data analysis using graphing and statistics, oral and poster presentations, and scientific writing. Fulfills requirement: Quantitative Reasoning. Prerequisites: a C- (1.67) average in BIO 111/L and BIO 112/L; or permission of the instructor. Corequisite: BIO 215 or BIO 550.3 credits.

**BIO 215. Biological Research Methods, Design, and Statistics Laboratory.** Corresponding laboratory for BIO 214. Fulfills requirement: Immersive Experience. Corequisite: BIO 214. 1 credit.

**BIO 221.Mammalian Anatomy.** Comparative anatomy with special attention to the structure and function of mammalian systems and special references to humans. Intensive laboratory work involves dissections and demonstrations using the cat as a model. Prerequisite: a C- (1.67) average in BIO 111 and BIO 112. Corequisite: BIO 221L. 4 credits.

**BIO 222.Human Physiology.** The design of this course is intended to impart an understanding of the basic concepts of human physiology with emphasis on neuromuscular, cardiovascular, and endocrine physiology. Laboratory exercises place emphasis on effective experimental designs and data analysis in the study of physiological mechanisms. Lab exercises cover such topics as muscle contraction measurements, spirometry, and ECG analysis. Fulfills requirement: Critical Thinking through Writing. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 222L. 4 credits.

**BIO 223. Human Nutrition.** An integrated overview of the principles of nutritional science, with emphasis placed on the role of nutrition in improving health. Topics will include guidelines for food intake, physiological roles of nutrients, nutritional concerns throughout the life cycle, global nutritional issues, and the role of diet in the prevention of disease. Laboratory exercises will be drawn from diet assessments. Prerequisites: a C- (1.67) average in BIO 111/L and BIO 112/L; CHM 111/113; or permission of the instructor. Corequisite: BIO 223L. 4 credits. [This course is cross-listed with BIO 224]

**BIO 224. Human Nutrition for Athletic Training.** An integrated overview of the principles of nutritional science, with emphasis placed on the role of nutrition in improving health. Topics will include guidelines for food intake, physiological roles of nutrients, nutritional concerns throughout the lifecycle, global nutritional issues, and the role of diet in the prevention of disease. Prerequisites: BIO 111/L and 112/L, or EXSC 101/L and 102/L; CHM 111/113. Course restricted to Athletic Training majors. 3 credits. [This course is cross-listed with BIO 223]

**BIO 231.Neurobiology.** This course takes an in-depth look at the biological and physiological processes that give rise to complexity of the nervous system and ultimately allow for complex function. It examines the biology of vertebrate nervous systems, with particular emphasis on the human nervous system. Topics include cellular and molecular biology of the neuron, neuroanatomy, neurophysiology, nervous system development and plasticity, mechanisms of learning and memory, and sensory and motor systems. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 231L. 4 credits. [This course is cross-listed with NEU 231]

**BIO 232.Neuroanatomy of Disease.** This course will examine, in depth, the neuroanatomical bases for selected disorders of the human central nervous system. The topics covered will include Parkinson's disease, Alzheimer's disease, Huntington's disease and stroke. Current trends in prevention and treatment of the disorders will also be studied. Prerequisite: BIO 111/L, BIO 112/L, and PSY 110.3 credits. [This course is cross-listed with NEU 232]

**BIO 290.Special Topics.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: BIO 111/L and 112/L or EXSC 101/L and 102/L. 1-4 credits.

**BIO 291.Special Topics in Cellular/Molecular Biology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: BIO 201/L. 4 credits.

**BIO 292.Special Topics in Organismal Biology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: BIO 201. Corequisite: BIO 290L. 4 credits.

**BIO 293. Special Topics in Physiological Biology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: BIO 201. Corequisite: BIO 290L. 4 credits.

**BIO 294. Special Topics in Population Biology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: BIO 201. Corequisite: BIO 290L. 4 credits.

**BIO 302.Plant Diversity.** The development and diversity of fungi, algae and land plants and the relationships between them. Field and laboratory work familiarizes the student with the structure and reproduction of algae and plants and with the identification and pollination of flowering plants in the local flora. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 302L. 4 credits.

**BIO 304. Developmental Biology.** An organismal and molecular approach to the study of animal development using typical invertebrate and vertebrate organisms. The laboratory includes the study of slides as well as experiments on fertilization, regeneration and metamorphosis. Fulfills

requirement: Critical Thinking through Writing. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L and BIO 201/L, or permission of the instructor. Corequisite: BIO 304L. 4 credits.

**BIO 305. Cell and Tissue Biology.** A study of cell ultrastructure and the microscopic anatomy of vertebrate tissues, including the structure and function of membranes and organelles, cell motility and excitability, and vertebrate tissue similarities and specialization in relation to function. Laboratory includes the preparation and staining of sections using selected histochemical and histological procedures as well as a variety of microscopic techniques. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 305L. 4 credits.

**BIO 306. Microbiology.** A study of the morphology, physiology and biochemistry of representative microorganisms. The laboratory emphasizes basic bacteriological techniques and procedures. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L; three semesters of chemistry or permission. Corequisite: BIO 306L. 4 credits.

**BIO 307. Plant Physiology.** A study of the functioning of plants, with emphasis on vascular plants. Fulfills requirement: Critical Thinking through Writing. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L; three semesters of chemistry or permission. Corequisite: BIO 307L. 4 credits.

**BIO 312. Ecology.** An examination of the basic concepts of ecology with extensive laboratory work and field experiences in freshwater and terrestrial ecosystems. Fulfills requirement: Critical Thinking through Writing. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 312L. 4 credits.

**BIO 313. Forest Ecology and Management.** This course will investigate how understanding forest ecology can aid in the development of forest management strategies. Students will learn how different silvicultural techniques will lead to different strategies. At the end of this course, students should be familiar with how to write and implement a forest management plan. Fulfills requirement: Critical Thinking through Writing. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 313L. 4 credits.

**BIO 314. Wildlife Ecology and Management.** This course will investigate how understanding the principles of wildlife ecology can aid in management and conservation practices. Students will learn about factors that influence wildlife populations and learn techniques used to monitor and manage wildlife populations. At the end of this course, students should be familiar with how to write and implement a wildlife management plan. Fulfills requirement: Quantitative Reasoning. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 314L. 4 credits.

**BIO 315. Wetland Ecology and Conservation.** This course will investigate how understanding the principles of wetland ecology can aid in wetland management and conservation practices. Students will learn about different types of wetlands, the skills necessary to delineate wetlands, and the management and policy issues relating to wetlands. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: BIO 315L. 4 credits.

**BIO 322. Vertebrate Physiology.** A study of the principles of vertebrate body function, with emphasis on the mechanisms by which cells and organs perform their functions and the interactions of the various organs in maintaining total body function. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L; one semester of chemistry or permission. Corequisite: BIO 322L. 4 credits.

**BIO 323. Introduction to Immunology.** An introduction to the anatomical, physiological and biochemical factors underlying the immune response. The course begins with a discussion of non-specific immunity, cellular immunity and antibody-mediated immune responses. The course then moves into a study of contemporary immunological topics, which are discussed with respect to major research papers in each area. Topics include autoimmunity, histocompatibility, immunogenetics and acquired immune deficiencies. Prerequisites: a C- (1.67) average in BIO 111/L and BIO 112/L; BIO 201/L; CHM 111/113 or equivalent; or permission of the instructor. Corequisite: BIO 323L. 4 credits.

**BIO 400. Internship.** Internship Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**BIO 402. Evolution.** This course is a study of biological evolution, the unifying principle of the biological sciences. Examples of topics to be covered include speciation, natural selection, sexual selection, the molecular basis of evolution, and the natural history of life on Earth. Special emphasis will be given to population genetics concepts and molecular phylogenetics. Laboratory exercises will include both bench work and computer-based labs. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. BIO 201/L. Corequisite: BIO 402L. 4 credits.

**BIO 403. Virology.** This course will cover the nature of viruses and is designed for upper-level biology students who have knowledge of the general principles of genetics, cell biology, molecular biology, and biochemistry. Prerequisite: BIO 201/L and at least junior standing. 3 credits.

**BIO 405. Cancer Biology.** This course will cover the biology of cancer and is designed for upper-level biology students who have knowledge of the general principles of genetics, cell biology, molecular biology, and biochemistry. Prerequisite: BIO 201/L and at least junior standing. 3 credits.

**BIO 410. Professional Development for the Health Professions.** Professional Development for the Health Professions prepares students for continued graduate work and a career in one of the health professions, including but not limited to medicine, physician assistant, dentistry, veterinary medicine, pharmacy, optometry, and occupational therapy. Students build a portfolio, learn how to develop an effective resume and write an effective personal statement, learn networking and interview skills, and have the chance to interact with professionals in the field through involvement in the Pre-Health Professions Society Seminar series. Fulfills requirement: Immersive Experience. Prerequisite: Students must be at least junior standing, or by permission of the instructor. 1 credit.

**BIO 499. Seminar.** Each senior student is required to do independent library research on an assigned topic and to make an oral presentation to the biology faculty and students. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. 1-2 credits.

**BIO 500. Independent Study.** Independent Study in Biology. This course may be repeated for credit as topic changes. 1-3 credits.

**BUS 130. Modern Business Organizations.** This course is designed as a survey course to introduce the many aspects of the business community through the use of discussion, case study, group projects, and "real world" contacts, typically via the web. We will use the text as the foundation for our study but you will incorporate current data from web sources and you will be exposed to "typical" business decisions as you complete your in-class case studies and your group project. Interactive class discussion is a cornerstone of the class. Restricted to freshman or sophomore standing, or by permission of instructor. 3 credits.

**BUS 170. Introduction to Business Analytics.** This course will provide students with a foundation to the mathematical techniques commonly used in business. It will do so using an applied approach, with Microsoft Excel as the primary tool. Fulfills requirement: Quantitative Reasoning. 3 credits.

**BUS 180. Business Applications in Excel and Access.** An extensive intermediate to advanced presentation of applications of Excel spreadsheets, graphing, and programming, as well as applications of Access database tools. This course will focus on hands-on learning and will prepare students for future courses within the Department of Business and Economics. 3 credits. [This course is cross-listed with ACT 180]

**BUS 215. Healthcare Finance.** An examination of the financial issues of health and medical care to determine how to provide the best healthcare to the most people in a cost-effective manner. Examination of the principal elements of healthcare, including the physician, the hospital, and the pharmaceutical industry, as well as the influence of government and the insurance industry. Prerequisites: ECN 101, or permission of the instructor. 3 credits.

**BUS 230. Principles of Management.** This course is designed to enhance student understanding of the foundational principles of management. The classroom learning process will consist of discussion, case studies, group projects, and analysis of current management writing. We will use the text, journal articles, and internet materials throughout the semester. Interactive class discussion is a cornerstone of the class and students are expected to be prepared to discuss the assigned material. Prerequisite: BUS 130. Accounting and business administration majors must have a cumulative GPA of 2.000 or greater in all foundation courses completed to date. 3 credits.

**BUS 250. Professional Ethics.** This course provides students with an understanding of the foundational concepts in professional ethics. The course focus is to develop comprehension of ethical concepts and theories and apply them to practices in the numerous professional environments through the use of case studies and group interaction. 3 credits.

**BUS 260. History of Managerial Thought.** The rise of large-scale corporations remade the economic landscape of the US and eventually the world. This course helps you to understand the evolving role of managerial thought and practice as it has changed from the 1850s to the present. Fulfills requirement: Critical Thinking through Writing. Prerequisites: Sophomore standing, or permission of the instructor. 4 credits. [This course is cross-listed with HIS 260]

**BUS 270. Environmental Management & Policy.** This course examines the history of environmental awareness and government intervention in the United States from the 1970's to the present. We examine the initial business response to permit requirements and mandated guidance. We discuss key environmental legislation and impact of corresponding regulations as well as the role of growing environmental activism and business transitions to a more proactive environmental approach. The course also examines the role of critical stakeholders in promoting increased transparency and improved environmental stewardship; and the emergence of sustainable business practices to reduce operating costs and achieve greater business success. 3 credits.

**BUS 275. Business in the European Union.** This course is part of a short-term summer study abroad program in Maastricht, Netherlands. It introduces students to the major issues of doing business in the European Union, including foreign investment, management across cultures, marketing and financing issues. Course will also cover the origins, structure, and operations of the European Union and how businesses function within this unique political and economic system. Prerequisite: Completion of 28 credits or more by May of the academic year in which the student is intending to participate in the Maastricht Summer Study Abroad Program. 3 credits.

**BUS 285. Organizational Communications.** The development of writing, speaking, and listening skills for business management. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 111/112 or FYE 111/112. Majors in accounting and business administration majors need a cumulative GPA of 2.00 or greater in all foundation courses completed to date. 3 credits.

**BUS 291. Special Topics in International Business.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**BUS 330. Managing Diversity in the Workforce.** An investigation of reasons why questions of diversity affect organizations including demographic changes, types of diversity and relevant federal legislation. Considers differences in race, sex, gender, religion, sexual orientation, ethnic background, age, physical ability/disability and geography. This course also includes a global perspective that looks at the international community and discusses the concept of managing diversity on an international platform. Fulfills requirement: Intercultural Competence. Prerequisite: Junior or senior standing, or permission of the instructor. 3 credits.

**BUS 340. Principles of Marketing.** An overview of marketing from the management perspective. Topics include marketing strategies, marketing research, consumer behavior, selecting target markets, developing, pricing, distributing and promoting products and services and non-profit marketing. Prerequisite: BUS 230; junior or senior standing, or by permission of the instructor. 3 credits.

**BUS 341. Consumer & Organizational Buying Behavior.** This course focuses on the analysis of the factors affecting the purchasing decision in the marketplace and the application of behavioral and social science concepts to the study of individual and group buying behavior. The course emphasizes the use of this understanding in making marketing mix decisions. Prerequisite: BUS 230 and BUS 340, or permission of the instructor. 3 credits.

**BUS 350. Organizational Behavior.** A detailed study of the theories and models of organizational behavior and development, with emphasis on the practical application of these models in the workplace to improve individual, group and organizational performance. Prerequisites: BUS 230; junior standing or by permission of the instructor. 3 credits.

**BUS 361. Principles of Finance.** A study of financial management covering analysis of asset, liability, capital relationships and operations; management of current assets and working capital; capital planning and budgeting; capital structure and dividend policy; short and intermediate term financing; internal and external long term financing; and other financial topics. Prerequisites: ACT 231 and ECN 101. 3 credits.

**BUS 371. Business Law I.** Elementary principles of law relating to the field of business. The course covers contracts, government regulation of business, consumer protection, bankruptcy, personal property, real estate, bailments, insurance and estates. 3 credits.

**BUS 372. Business Law II.** Elementary principles of law relating to business. Includes agency, employment, commercial paper, security devices, insurance, partnerships, corporation, estates and bankruptcy. 3 credits.

**BUS 374. Personal Selling and Sales Management.** The study of personal selling as a communication process and the management of the personal selling force. Emphasis is placed upon the development, implementation and evaluation of the sales presentation and upon the role of the sales manager in staffing, compensating, motivating, controlling and evaluating the sales force. Effective oral and written communication is stressed. Prerequisite: BUS 340.3 credits.

**BUS 376. International Business Management.** This course provides an overview of how the global business environment impacts decision-making and planning within the multinational firm. Key concepts include an overview of the means of conducting international business, with an emphasis on what makes international strategy different from a domestically-focused one; the effects of the social systems within countries on the conduct of international business; the major theories explaining international business transactions and the institutions influencing those activities; the financial exchange systems and institutions that measure and facilitate international transactions; and the dynamic interface between countries and companies attempting to conduct foreign business activities. Prerequisite: BUS 230.3 credits.

**BUS 383. Management Science.** An introduction to the techniques and models used in management science. Topics include forecasting, inventory control models, linear programming, product scheduling, and simulation. Prerequisites: MAS 150, and MAS 170 or BUS 170, with a minimum grade of C- or better; BUS 130; ACT 231.3 credits.

**BUS 390.Special Topics in Business Administration.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**BUS 391.Special Topics in International Business.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**BUS 399. Internship Seminar.** This course is designed to enhance a student's internship experience and provide practical guidance to maximize the opportunity provided by field placement. Topics include: identifying the academic and interpersonal abilities necessary to be a successful intern at the undergraduate level; reviewing the broad skills and values related to different careers in business, economics, and accounting; preparing students for the different elements of job search; exploring employment options in business, accounting, and economics; and reflecting on one's emerging skills/interests to develop a general career path for post-collegiate life. Graded pass/fail. This course may be repeated for credit as topic changes. Prerequisites: A cumulative GPA of 2.75 or greater, or permission of the chairperson. Must be junior or senior standing. Corequisite: BUS 400, ACT 400 or ECN 400.1 credit.

**BUS 400.Internship.** Practical and professional work experience related to the student's career interests, involving both on-site and faculty supervision. Graded pass/fail. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: 2.75 GPA, permission of the chairperson, completion of department's application form. Generally limited to juniors and seniors. 1-12 credits.

**BUS 420.Human Resource Management.** This course provides students with a comprehensive and real-world exposure into human resource management. Students will use text, articles, handouts, and projects to gain a solid understanding of this discipline. The primary foci for this course are strategic human resource planning, recruitment (job design, skill assessment, and selection), training and development, performance evaluation, and compensation. Included in these topics will be discussions on relevant laws, current workplace trends, and future concerns. Prerequisite: BUS 130; junior or senior standing or by permission of the instructor. 3 credits.

**BUS 450.Business Ethics and Social Responsibility.** This course examines the major ethical issues, dilemmas, and social responsibilities that confront businesses, organizations, and individuals in decision-making roles. Case studies and other decision-making scenarios will be utilized to facilitate and provide current, real-world context to the ethical decision making scenarios and to promote greater understanding of the difference between what is simply legal and what might or might not be perceived as ethical. A major goal of this course is for students to clarify their own personal approach to ethical issues and prepare them for challenges they might face in their careers and in life. In addition, this course is designed to promote effective evidenced based decision making and to improve students' communication skills both in writing and orally. Fulfills requirement: Critical Thinking through Writing. Prerequisites: BUS 250 and PHL 210 or by permission of the instructor. 3 credits.

**BUS 460.Management Information Systems.** Examines data sources and the role of information in management planning, operations and control in various types of business environments. Treats information as a key organization resource parallel to people, money, materials and technology. Prerequisite: BUS 130, BUS 180, and ACT 231; Junior or senior standing or by permission of the instructor. 3 credits.

**BUS 485. Strategic Management.** A capstone course to study administrative processes under conditions of uncertainty, integrating prior studies in management, accounting and economics. Uses case method and computer simulation. Prerequisite: BUS 230, BUS 340, BUS 361 and senior standing. Designed for last semester seniors. Course requires business casual or business professional dress at all class sessions. Underclassmen admitted with permission of instructor and chairperson. 3 credits.

**BUS 487. Healthcare Management.** A capstone course to study the administrative processes of America's healthcare industry including institutional infrastructure, governance systems, financial systems, personnel systems, quality controls, nursing and clinical services, and marketing. The course integrates prior study in healthcare, management, accounting, and economics. Students will develop problem solving skills and an appropriate management style. Prerequisite: Senior standing or permission. 3 credits.

**CDS 120.Introduction to Programming with Python.** This course introduces the fundamentals of computer programming using the Python programming language. Topics include: variables, types, and assignment; iteration and conditional execution; functions, modules, and structured design; complex types and data structures. 3 credits.

**CDS 121.Data.** An introduction to the principles, techniques, and tools used in the creation, organization, and manipulation of data in a modern computing environment. Topics will include: computer memory organization and binary data formats; files and file systems; relational databases; modern "noSQL" datastores. Students will be introduced to some elementary programming in a language like Python. 3 credits.

**CDS 180.Language Lab: Python.** A self-paced, project-based approach to learning a computer programming language. Several different languages are available in order to develop familiarity with different languages. Graded pass/fail. Prerequisite: CDS 142, or other computer programming background and permission of the instructor. 1 credit.

**CDS 181. Language Lab: C++.** A self-paced, project-based approach to learning a computer programming language. Several different languages are available in order to develop familiarity with different languages. Graded pass/fail. Prerequisite: CDS 142, or other computer programming background and permission of the instructor. 1 credit.

**CDS 182. Language Lab: C#.** A self-paced, project-based approach to learning a computer programming language. Several different languages are available in order to develop familiarity with different languages. Graded pass/fail. Prerequisite: CDS 142, or other computer programming background and permission of the instructor. 1 credit.

**CDS 220. Actuarial Software Structures.** This course will explore technologies commonly used in the actuarial profession, including Excel, VBA, database design, and programming. Students will also study probability topics using these tools. Prerequisite: ASC-281 or MAS-371.3 credits.

**CDS 241. Programming II.** A continuation of CDS 142, students will extend and deepen their understanding of programming using Java. The course will cover three main topics: Object-oriented software organization: design and implementation of elementary data structures and algorithms; the mathematical tools and techniques required for complexity analysis. Prerequisite: CDS 142, or by permission of the instructor. 3 credits.

**CDS 242. Algorithms and Data Structures.** A study of the design, analysis, and application of data structures and algorithms. Trees, graphs, heaps, hash tables, and other structures will be considered. Several mathematical techniques (e. g., complexity analysis, recurrence relations, and induction) will be studied and applied to understanding these algorithms and structures. The impact of modern computer hardware, especially caches and parallelism on the design and performance of data structures and algorithms will be considered. Prerequisite: CDS 241; MAS 111 or MAS 161.3 credits.

**CDS 280. Introductory Data Analysis Lab.** Projects in access to data and its analysis and manipulation, using the Java programming language. Graded pass/fail. Prerequisite: CDS 121 and CDS 142.1 credit.

**CDS 281. Software Processes.** A primer in managing the software development process, from the initial creation of a project proposal to the organization of the development team and its workflow. Will include an overview of an agile process such as Scrum. Graded pass/fail. Prerequisite: CDS 142, or by permission of the instructor. 1 credit.

**CDS 285. Computational Problem Solving I.** Students will sharpen their skill at applying computational problem-solving techniques (particularly the design of data structures and algorithms) in the context of competitive programming. Graded pass/fail. Prerequisite: CDS 142, or by permission of the instructor. 1 credit.

**CDS 341. Machine Learning and Data Analytics I.** Concepts and practice in extracting knowledge from data. We use data to train a model to predict, to classify, and to discover associations. Performance metrics are used to assess a model, and to construct better models. Prerequisite: CDS 142, MAS 222, MAS 270 or 372.3 credits.

**CDS 342. Machine Learning and Data Analytics II.** We build on the fundamental concepts and methods for machine learning and data analytics covered in CDS 341. Topics that might be included in CDS 342 are dimension reduction, unsupervised pattern finding, cluster analysis, logistic regression, and discriminant analysis. Prerequisite: CDS 242 and 341.3 credits.

**CDS 343. Data Analysis and Visualization.** This course will explore how to design and create data visualizations based on the data available and the tasks to be achieved. This process includes data modeling, data processing (such as aggregation, filtering, and cleaning), mapping data attributes to graphical attributes, and strategic visual encoding based on known properties of visual perception as well as the task(s) at hand. Students will also learn to evaluate the effectiveness of visualization designs and conduct exploratory data analysis using visualization. Prerequisite: CDS 242.3 credits.

**CDS 361. Concurrent and Parallel Programming.** A survey of concurrency and parallelism in modern software design. Threads and locks and other concurrency primitives. Thread pools, task-based parallelism, task-scheduling algorithms; hardware parallelism, GPUs. Prerequisite: CDS 242 and MAS 112.3 credits.

**CDS 362. Distributed Systems.** This course examines the design of modern, distributed software applications. Client/Server models (from RPC designs to modern REST-based architectures) will be the focus, though other distribution models will be considered. Scalability, security, and other fundamental issues will be addressed. Students will design and implement a service and a mobile front end to that service as a semester-long team project. Prerequisite: CDS 242 and MAS 112.3 credits.

**CDS 385. Computational Problem Solving II.** Students will sharpen their skill at applying computational problem-solving techniques (particularly the design of data structures and algorithms) in the context of competitive programming. This course considers more advanced data structures and algorithmic techniques than CDS 285. Graded pass/fail. Prerequisite: CDS 242, CSC 232, or by permission of the instructor. 1 credit.

**CDS 400. Internship.** Internship in Computer and Data Science. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**CDS 441. Operating Systems.** Theory and practice of modern operating systems. Topics include memory management, file systems, scheduling, concurrency, distributed processes, and security. Prerequisites: CDS 242 and MAS 222.3 credits.

**CDS 448. Databases.** The theory, structure and implementation, and application of modern database systems. Prerequisite: CSC 242 and MAS 222.3 credits.

**CDS 452. Artificial Intelligence.** An introduction to the field of AI. Topics include expert systems, goal-seeking algorithms, neural networks, genetic algorithms, computer vision, and language recognition. Prerequisites: CSC 242 and MAS 222.3 credits.

**CDS 499. Professional Experience.** This course tracks the completion of Professional Experiences by students in the Computer and Data Science major. Prerequisite: Must be junior or senior standing. 0 credits.

**CDS 500. Independent Study.** Independent Study in Computer Science. Graded pass/fail. This course may be repeated for credit as topic changes. 1-3 credits.

**CHM 105. General, Organic and Biochemistry.** An introduction to general chemistry, organic chemistry, and biochemistry for the students majoring in certain health science programs. Topics include atomic and molecular structure, chemical bonding, chemical reactivity, pH, equilibrium, and radioactivity. This course is not intended as a substitute for any student who requires a typical two semester, Principles of Chemistry lecture sequence, such as those students planning to attend medical school or other health-related professional programs. Prerequisite: one year of high school chemistry or permission of the instructor. Corequisite: CHM 106, if not previously completed. 3 credits.

**CHM 106. General, Organic and Biochemistry Laboratory.** This lab involves the application and experimental investigations of the principles and knowledge of general chemistry, organic chemistry, and biochemistry. This laboratory is not intended as a substitute for any student who requires a typical two semester, Introductory Chemistry laboratory sequence, such as those students planning to attend medical school or other health-related professional programs. Corequisite: CHM 105, if not previously completed. 1 credit.

**CHM 111. Principles of Chemistry I.** An introduction to chemistry for the science major. First semester topics include atomic and molecular structure, chemical reactions, and calculations involving chemical concentrations, gas laws and bonding. Prerequisite: one year of high school chemistry or permission of the instructor. Corequisite: CHM 113 or 115, if not previously completed. 3 credits.

**CHM 112. Principles of Chemistry II.** A continuation of first semester. Topics include kinetics, acids and bases, equilibrium, thermodynamics, electro-chemistry and nuclear chemistry. Prerequisite: CHM 111. Corequisite: CHM 114 or 116, if not previously completed. 3 credits.

**CHM 113. Introductory Laboratory I.** Laboratory course to accompany CHM 111. Experiments provide exposure to both quantitative and qualitative methods. Topics include stoichiometry, synthesis, standard curves, spectrophotometry, quantitative analysis, and gas laws. In addition to the use of essential laboratory equipment and instrumentation, there is a strong emphasis on the use spreadsheets to organize and analyze data. Corequisite: CHM 111, if not previously completed. 1 credit.

**CHM 114. Introductory Laboratory II.** Second semester laboratory course to accompany CHM 112. Experiments cover colligative properties, isolation & extraction methods, thin layer chromatography, thermodynamics, kinetics, equilibrium, and electrochemistry. In addition to the use of essential laboratory equipment and instrumentation, there is a strong emphasis on the use spreadsheets to organize and analyze data. Prerequisite: CHM 111 and 113. Corequisite: CHM 112, if not previously completed. 1 credit.

**CHM 115. Techniques of Chemistry I.** Extended projects involving the synthesis of inorganic and organic compounds that require the development of procedure from published literature methods. The prepared compounds are then analyzed using quantitative analytical techniques, as well as introductory spectroscopic techniques. In addition to the use of essential laboratory equipment, students are exposed to advanced spectroscopic methods; there is an additional emphasis on the use of computers in the laboratory. Restricted to chemistry, biochemistry and molecular biology, and environmental science majors. Corequisite: CHM 111, if not previously completed. 1 credit.

**CHM 116. Techniques of Chemistry II.** Second semester of extended projects, focusing on the synthesis and characterization of compounds. In addition to the use of essential laboratory equipment, students are exposed to advanced spectroscopic methods; there is an additional emphasis on the use of computers in the laboratory. Projects are modeled after real-world career paths such as academic research, industrial product development, government regulation, or forensic science. Prerequisite: CHM 111 and 115; restricted to majors in chemistry or biochemistry and molecular biology, and environmental science. Prerequisite: CHM 111 and 115; restricted to majors in chemistry or biochemistry and molecular biology. Corequisite: CHM 112, if not previously completed. 1 credit.

**CHM 213. Organic Chemistry I.** An introduction to the principles of organic chemistry. The focus of the course is on the structure of organic molecules and how the structure of various functional groups affects their reactivity. The concepts of reactivity, structure and mechanism are applied to organic synthesis. Prerequisite: CHM 112. Corequisite: CHM 215. 3 credits.

**CHM 214. Organic Chemistry II.** Second semester of an introduction to the principles of organic chemistry. The focus of the course is on the structure of organic molecules and how the structure of various functional groups affects their reactivity. The concepts of reactivity, structure and mechanism are applied to organic synthesis. Prerequisite: CHM 213. 3 credits.

**CHM 215. Organic Laboratory I.** An introduction to the practice of classical organic chemistry and modern instrumental organic chemistry. The techniques of organic synthesis are taught along with instrumental methods including infrared, nuclear magnetic resonance and mass spectrometry. Prerequisite: CHM 112/114 or 112/116. Corequisite: CHM 213. 1 credit.

**CHM 216. Organic Laboratory II.** Second semester of an introduction to the practice of classical organic chemistry and modern instrumental organic chemistry. The techniques of organic synthesis are taught along with instrumental methods including infrared, nuclear magnetic resonance and mass spectrometry. Prerequisite or corequisite: CHM 214. 1 credit.

**CHM 222. Introductory Inorganic Chemistry.** The application of elementary principles of chemistry to provide a basis for understanding the physical and chemical properties of the elements. Topics include atomic structure and periodicity, molecular structure and bonding theories, acid-based chemistry, solvents and precipitation reactions, transition elements and coordination chemistry, the structures of solids, physical techniques, and descriptive chemistry of selected main group elements. Prerequisite: CHM 112. 3 credits.

**CHM 230. Inorganic Chemistry Laboratory.** Students will be exposed to a number of advanced synthetic and characterization methods including inert atmosphere manipulations, high vacuum and temperature dehydrations, mixed solvent growth and recrystallizations, modern spectroscopic techniques and photochemical transformations. Corequisite: CHM 222. 1 credit.

**CHM 302. Environmental Chemistry.** In this course, reactions occurring in atmospheric, aquatic, and terrestrial systems will be examined, with consideration given to chemical transformations involving both natural substances and pollutants. Time will also be devoted to current issues of relevance, such as climate change, alternative energy sources, green chemistry and sustainability. Prerequisite: CHM 213. 3 credits.

**CHM 305. Analytical Chemistry.** Topics for this course include statistical methods; activity and activity coefficients; chemical equilibria involving complex systems; volumetric analyses including acid/base, precipitation, redox, and complexometric titrations; principles of electrochemistry, potentiometry, electrogravimetry, coulometry, and voltammetry. Prerequisites: CHM 112 and MAS 161. 3 credits.

**CHM 306. Instrumental Analysis.** Basic types of chemical instrumentation and their applications in analytical chemistry are examined. These include gas and liquid chromatography; infrared, UV-VIS, fluorescence, atomic absorption, and plasma emission spectrophotometry; nuclear magnetic resonance and mass spectrometry. Prerequisites: CHM 112 and MAS 161.3 credits.

**CHM 307. Quantitative Analysis Lab.** Volumetric, spectrophotometric, and electrochemical methods are applied to the analysis of unknowns. Prerequisite or corequisite: CHM 305. 1 credit.

**CHM 308. Instrumental Analysis Lab.** Chemical instrumentation is utilized in method development, unknown determinations, and chemical analysis. Prerequisite or corequisite: CHM 306. 1 credit.

**CHM 311. Physical Chemistry I.** The study of chemical systems from an atomic and molecular perspective. Thermodynamic laws and functions applied to mechanical, thermal, and material equilibrium in gases, liquids, and solids. Also included are electrochemical systems, as well as kinetic and transport processes occurring in gases, in solutions, and at solid surfaces. Prerequisites: CHM 112; MAS 162 or MAS 111; and PHY 104 or PHY 112.3 credits.

**CHM 312. Physical Chemistry II.** A continuation of the study of chemical systems from an atomic and molecular perspective. Basic concepts of quantum chemistry applied to atomic and molecular structure. Also included are statistical mechanics and spectroscopy. Prerequisite: CHM 311.3 credits.

**CHM 321. Physical Laboratory I.** Experimental study of the principles of physical chemistry, focusing on phase and reaction equilibrium, transport properties, and chemical kinetics. Prerequisite or corequisite: CHM 311.1 credit.

**CHM 322. Physical Laboratory II.** Second semester of an experimental study of the principles of physical chemistry. Work involves spectroscopy (IR, UV/VIS, fluorescence, Raman, and NMR), calorimetry, refractometry, conductivity, and viscometry applied to atomic and molecular structure, thermodynamics, phase and reaction equilibrium, and chemical kinetics. Prerequisite or corequisite: CHM 312.1 credit.

**CHM 411. Advanced Inorganic Chemistry.** A study of bonding theories, molecular structure, group theory, spectroscopy and reaction mechanisms with special emphasis on transition metal complexes, organometallic chemistry, and catalysis. Prerequisite: CHM 312.3 credits.

**CHM 412. Advanced Physical Chemistry.** In-depth treatment of the experimental and theoretical aspects of chemical kinetics and reaction dynamics. Reactions occurring in the gas phase, in the solution phase, and at solid surfaces will be discussed, with examples being drawn from catalysis, environmental/atmospheric chemistry, and astrochemistry. Prerequisite or corequisite: CHM 312 or permission of the instructor. 3 credits.

**CHM 414. Advanced Organic Chemistry.** A study of advanced topics in the field of organic and polymer chemistry. The course covers mechanistic and synthetic chemistry with an emphasis on current and classical organic chemical literature. The course also describes the synthesis and characterization of polymers along with their structural/property relationships. Prerequisites: CHM 214. 3 credits.

**CHM 490. Special Topics.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: CHM 214, or permission of the instructor. 3 credits.

**CHM 550. Advanced Research.** Advanced Research in Chemistry. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-3 credits.

**COE 202CS. Gender and Identity: Synthesis.** Gender is a fundamental organizing principle of society; for better or worse, we allow our assumptions regarding gender to shape how we interact with and perceive others. In this connective experience, we will explore the dimensions of gender, a concept no longer restricted solely to the definitions of men and women. We will explore research, which investigates the degree to which males and females are similar and/or different in the biological, cognitive, social, and emotional domains. The impact of gender on identity will be examined in a variety of contexts, such as leadership in the workplace, and the impact of gender inequality on the process of economic development and socio-political systems in developing countries. We will examine gender and its relationship to broader historical, social, and geopolitical contexts. We will address gendered communication, verbal and nonverbal, and how it changes based on where and with whom we communicate. Finally, we will explore theoretical and literary texts that address some of the most fundamental issues of gender and identity, and analyze intersections among gender and other categories of difference, such as class, race, religion, and national identity. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 202HU. Gender, Identity, and Literature.** What does it mean to be a man or a woman? Where do these categories come from, and what functions do they serve? Most importantly, is there anything beyond them? This course will introduce students to a broad selection of theoretical and literary texts that pose, and attempt to answer, some of the most fundamental questions of gender and identity. Students will read, study, and critique texts that represent diverse gender and sexual experiences, as well as analyze the ways different identities intersect with other cultural categories, such as race, ethnicity, class, and religion. Through class discussion, critical writing, and close reading of both theory and fiction, students will examine the historical and cultural constructions of gender, and analyze the ways that literature has informed, resisted, and richly complicated our understanding of what it means to be gendered beings. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 202NS. The Science of Gender.** This course is part of a Connective Experience, which examines a broad spectrum of issues related to Gender and Identity. A primary focus will be to examine how scientific methodology is used to answer questions related to Gender Identity. Of central importance is the examination of empirical findings related to gender differences and similarities in biological, behavioral, cognitive, social, and emotional domains. This course will also involve a critical examination of the meaning of gender in the field of psychology and within broader society. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 202SS. Gender, Leadership, and the Workplace.** This course is designed to provide students with ideas, information, and insights that pertain to gender and leadership. The course will look at the status of gender and leadership through a global perspective and will examine leadership through many lenses including government, civic leadership, industry, education, and the sciences. The course will strive to have students examine if women indeed still have less access to leadership roles than men and, if so, to then identify the numerous and complex

reasons for this diminished access. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 204CS. Perfection. Noble Goal or the Road to Nowhere?: Synthesis.** A hunger for perfection is a universal human trait. Whether the search for the perfect community, the perfect body, or the perfect dream, countless hours have been both productively spent and uselessly wasted in the pursuit of this ideal. A core of shared readings will be scrutinized in all three courses, supplemented by readings tailored to each path of inquiry. Students will explore the influence of pursuing perfection on everything from social movements to physics to speculative fiction, ultimately confronting the questions, "Just what is perfection? And is it even worth it?" Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 204HU. Utopian and Dystopian Literature.** Can society be perfect? Can it be perfect for everybody? What do we lose or gain in our pursuit of perfection? In this seminar-style course, students will read and discuss literary works and view films within the field of utopian and dystopian fiction. By looking critically at the political, cultural, economic and historic events of the time period, students will seek the basis of the 'problem' that drove the author to create the utopian or dystopian work in the literary selections and the efficacy of the author's "solution" for the myriad of characters in the created world. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 204NS. The Pursuit of the Perfect.** Many proposed Utopias view the scientific method and its resulting body of theory as the "most perfect" pursuit of "perfect" knowledge, but is this truly the case? In this course, we will first explore how the scientific method was developed in the pursuit of perfect inquiry, leading into a consideration of what scientists mean by the term "perfect knowledge" and how it has changed over time. This section of the course will contain hands-on experiments, dry lab experiments, and mastery of some simple but powerful statistical tools common in the natural sciences to equip you with important fundamental science skills. The latter half of the course will explore the role of scientific advances in pursuing Utopia. Science has given us the ability to do many things, but should they be done? Ethical discussions on data handling, scientific narrative creation, and the responsible use of science will permeate the course as we tackle an exciting selection of readings, films, and articles that we will use as focal points of discussion. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 204SS. Past Imperfect.** Utopian thinking builds on the ancient parts of our brain that quickly categorize people into insiders or outsiders. Such implicit biases shape the social movements claiming to perfect the world that are as old as Islam and as recent as free-market capitalism. Marx inspired reformers who banned child labor but he was also used by communist regimes that justified their dictatorships by appeals to his ideals combined with a police state. Adam Smith's thinking inspired economic changes that have raised global living standards but have also been used to rationalize corrupt police states throughout the world. Understanding the appeal of perfection, the good and bad that it has done, provides a window into the messy nature of the human condition and the world itself. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 206CS. Genealogy: Synthesis.** Genealogy is now a multidisciplinary field. Current practitioners combine traditional methods with computer technology and genetic tests. In turn, the genetic testing of large populations and of ancient specimens has revolutionized those parts of anthropology that concern human evolution and population migration. And, as a meaning-making species, we use artistic and journalistic expression to explore genetics in light of human relationships, human identity, human health, and our ties to the past. This connective experience will introduce both the traditional methods of genealogy and modern enhancements, with a focus on variety and critical evaluation of sources. It will introduce students to a modern account of "the human story" as known through both archaeology and genetics. And it will explore questions of identity and ethics that arise as part of genealogical investigations. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 206HU. Narrative, Ancestry, and Genealogy.** The search for identity often leads us to seek wisdom from our ancestors and cultural traditions. Early human narrative art interrogates ancestral history and values just as contemporary narratives attempt to find meaning nestled in genetic code. In this course, students will read and view a variety of texts, both fiction and nonfiction, that explore the desire to connect with the past via family trees and the perils and benefits of modern science as a new kind of ancestral shaman. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 206NS. Human Genetics and Heredity.** Humans have roamed the earth for perhaps as long as 250,000 years. This course will examine humans and human history through the lens of genetics. Students will learn about the relationship between genes and traits and the way that genetic studies are used to infer human history and heredity. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 206SS. Modern Methods in Genealogy.** This course will introduce both traditional and modern methods of genealogy, emphasizing critical evaluation of sources and the genealogical proof standard. It will present traditional types of sources and modern tools including source repositories, crowdsourced research, and genetic individual research with autosomal testing and of population-scale research from widespread testing of mitochondrial and Y-chromosome DNA. (Genetic tests are neither provided nor required as part of the course but will serve as a useful enhancement if a student has one done.) Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 208CS. Batter Up: Baseball Across Disciplines: Synthesis.** Tom Boswell once said, "More than any other American sport, baseball creates the magnetic, addictive illusion that it can almost be understood." This connective experience seeks to almost understand three facets of baseball: the rich literature about the game; the game and its players in the context of societal changes in the Americas over the past century; and the objective efforts to quantify and maximize player performance in the game. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 208HU. Stealing Signs: The Literature of Baseball.** Baseball may be the most literary of sports, and American English is well-peppered with the language of baseball, from striking out on a date to knocking an interview out of the park. This course will explore the world of baseball literature and the way the sport and the word come together. The course will focus on connections between the game and creative expression,

on literature as cultural artifact, and on the principles of reading and writing about literary works. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 208NS. Introduction to Sabermetrics.** How can pitching, hitting, defense, and base running be quantitatively measured to understand how player performance translates to scoring or preventing runs and, ultimately, to winning and losing baseball games? Baseball organizations and fans alike have recently developed increasingly sophisticated tools to answer these and other questions. This course will introduce students to the terminology and methods associated with sabermetrics. Students will critically analyze statistical arguments, access data from available sources, and formulate and test their own hypotheses. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 208SS. Social and Cultural History through Baseball.** Dubbed "our national game" as early as the 1850s, baseball has alternately anticipated, reflected, and lagged behind social and cultural changes in the larger American experience. From demographic changes to labor strife to matters of race, critical moments in American life have frequently been played out in microcosm on the diamond. This course will use the history of baseball as a window toward examining the country's social and cultural history over the last century and a half. The course will also offer a look into baseball's international expansion in recent decades, even as the game has faced challenges to being considered America's "national pastime." \* This course fulfills the Social Sciences component of the Baseball Connective Experience. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 210CS. Science, Society, and Structure of Music: Synthesis.** From Bach to Beyoncé, music permeates our life and enriches it in countless ways. These connective courses will challenge students and instructors to explore music as so much more than mere background sound or ambient noise. Join us for this multifaceted exploration of music including a scientific study of how sound is generated and analyzed including in-class experiments and demonstrations. Through listening and discussion, students will investigate musical elements and historical developments to create their own well-informed opinion about music's value. Finally, through exposure to documentaries, text, and audio recordings, we will explore music's impact on individual and societal developments and expression. This will include research and discovery of music's effects on consumerism, politics, social movements, cultural expression, and personal identity. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 210HU. What Makes It Great? Musical Analysis and Impact.** Why do we like the music we prefer? How does the music of today relate to the music of Bach, Beethoven, and Stravinsky? Discover the historical context of music from the middle ages to the modern classical period. Through listening and discussion students will develop and understanding and appreciation of the classical music and will be able to analyze the musical content and create their own well informed opinion about the music's value. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 210NS. Introduction to the Science of Sound and Impact.** In this course students will learn how sound is generated, propagated, detected, and analyzed. Topics include: a general introduction to the physics of waves; properties of sound waves; the elements of music as they relate to physical properties of sound; an introduction to the design of musical instruments; a basic introduction to Fourier analysis; and the electrical production and recording of sound. Demonstrations and in-class experiments will supplement the course content. No prior knowledge of physics is assumed in the design of this course. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 210SS. Music, Society, and Self and Impact.** From entertainment to education, music is all around us. Many of our earliest memories include music as a learning tool, expression of our cultures, and mood manipulator. But, how aware are we of the influence of music on our societies and selves? In this course, we will explore the impact of music as an instrument for personal and societal expression. This will include its effects on consumerism, politics, social movements, cultural expression, and personal identity. This course will also provide a backdrop to debate society's level of responsibility toward arts advocacy. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 212CS. Information and Deception: Creation, Power, Manipulation and Subversion: Synthesis.** These connective courses will examine the cultural foundations, foreign policy strategies and data analytics involved with the use of information and disinformation and hybrid warfare designed to influence, exploit and sabotage businesses, governments, and individuals. Misinformation is used to distort history, undermine governance, and weaken scientific truths, and actors go to great lengths to avoid attribution and responsibility. Through controls placed on the dissemination of information, use of government-sponsored asymmetric methods and hybrid warfare tactics and cyber-attacks, facts can be undermined, experts dismissed and ignored, and populations and policymakers confused regarding what is real and what is false. These connective courses will challenge both students and instructors to read texts from different academic disciplines and think across conventional disciplinary boundaries to more fully comprehend the extent to which institutions and individuals can fall victim to deceptions and falsehoods. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 212HU. The Silent Library: Information Across Cultures.** The Library. It conjures images of soaring stacks of leather bound books and hushed whispers between students. This class will examine that aesthetic and explore the context and meaning of the library with cultures. The library of a culture tells you what people value. Through the lens of art, architecture, photography, film, and literature, this class will examine how cultural narratives have shaped the library. The class will end by examining how modern society romanticizes the aesthetic of libraries while simultaneously determining they are useless in the face of the internet and digital information. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 212NS. The Creation and Manipulation of Information.** How can we understand when we are being lied to and manipulated with information? How do we generate research and information that is sound? Do we know the difference? In this course, we will learn how to understand the ways that research, data, and quantitative information can deceive us intentionally or unintentionally. Through class research and critiques of the information Americans receive daily, we will arm our toolbox to sleuth out manipulation and learn how to produce accurate and

sound information. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 212SS. Cyber Attacks and Disinformation: Asymmetric Tactics and Hybrid Warfare in the 21st Century.** In this course, students will be challenged to understand the roles played by state and non-state actors engaging in cyberattacks, direct disinformation, and covert influence campaigns to undermine and undercut democratic political systems, confuse citizens, and shape public opinion around the world. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 215CS. How We Remember, Why We Forget: Synthesis.** Memory shapes our identities as individuals and as groups, it determines our national identity, and it shapes our individual and collective behavior. Without our memories of the past, we would not be who we are. We do not, however remember everything in our past and our recollections are often biased by our motivations, present experiences, and outside influences. How we select what we remember and what we choose to forget, are important aspects of memory and identity. This program addresses the topic of memory through courses in Psychology, History, and English. These courses will address the biological and psychological basis of memory, how the memory of the past shapes events in the present through an examination of religious violence, and how memory plays a role in representation in the arts. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 215HU. Memory Unmade: Literature and Memory.** What do we remember? How do we remember? And why do we forget? For millennia much of artistic representation has concerned itself with our recollection of the past and the stories we choose to tell about it. This course will explore how memory is represented in literature and the other arts. Since memory crafts both personal as well as national identity, the course will examine the ways in which memory acts as a political, social, and cultural impetus in contemporary society. The course will focus on the different ways in which memory is represented in literary and cultural texts across the world through various genres like memoirs, fiction, "found footage," mockumentaries, oral narratives, photography, etc. In this way, the course will interrogate the contentious relationship between truth and memory. This course fulfills the Humanities component of the Memory connective experience. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 215NS. The Myths of Memory.** The natural science component of this connective experience will focus on the cognitive and neurological underpinnings of human memory. Topics will include: types of memory, how/where memory is localized in the brain, development of memory across the lifespan, disorders of memory, methods of studying memory, ways to improve memory, how memory can be distorted/faulty, and the societal implications of memory in things like eye-witness testimony and developing bias. This course will also provide psychological insight into how memory tactics such as misattribution and suggestibility can/have been used historically to shift societal opinions on religious and political events. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 215SS. Religious Violence and Memory in the Twentieth Century.** This course focuses on the role that memory plays in cycles of religious violence. To examine this question, the class focuses on four key episodes of religious violence in the twentieth century: the Holocaust, the Israeli-Palestinian conflict, Indian Partition in 1947 and the Bosnian crisis in the 1990s. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 217CS. Revolution: Disruption and Advancement in Art, Politics and Science: Synthesis.** These connected courses explore how dramatic changes in art, science and politics disrupt and divide societies, force us to rethink what we thought we knew, and challenge our perceptions of what is good and desirable. Through exposure to the ways that revolution is conceived of and studied in the humanities, social sciences and natural sciences, students will learn about and compare some of the different understandings, origins, and consequences of revolution as broadly understood phenomenon, at the same time, students and instructors will think across traditional academic boundaries to better understand how revolutions that start out in one area often spill into others - for example, the ways in which artists and scientist are affected by political revolution just as politicians must create new policies in response to dramatic innovations in the arts and sciences. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 217HU. Revolution: Art and the Radical.** This course examines the intersections of art and socio-political movements in the 20th and 21st centuries, including works of protest art and covert forms of radical art that transgress established forms or genres. Topics include early abstract art, the emergence of "anti-aesthetics", performance and body politics, punk and DIY. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 217NS. Revolution: The Nanotechnology Age.** This course introduces students to the fundamental science behind nanotechnology. We will discuss the impact of nanotechnology on the basic sciences of chemistry, physics, and biology, as well as applications in areas such as microelectronics, medicine, energy, and environmental remediation. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 217SS. Revolution: Political Upheaval Since 1900.** This course is designed to introduce students to the various types of social movements and political revolutions in the twentieth and twenty-first centuries. This includes recent developments such as the Arab Spring, the Tea Party, and Black Lives Matter, and pivotal political revolutions in countries from China to Iran to Cuba. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 220CS. Time: Intersections of Science, Society And Narrative: Synthesis.** Though human beings differ in myriad ways, we all experience our lives through the arrow of time, moving from the past to the present and on to the future. But where is the line between the past and the present? Does the future exist, really? Is time a fixed feature of reality and invariant aspects of our universe or merely a construct of human nature? Time is a fraught concept that has been studied across multiple disciplines, understood in a variety of ways through history, and has even been posited as unnecessary in ultimate definitions of reality. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 220HU. Narratives of Space and Time in Literature and Film.** How do authors and directors structure an audience's perception of an interaction with time in their narratives? Literature and film have experimented with using actual time, sequential time, reversed time, and almost every variant we can imagine. What do different narrative approaches to time have to teach us both about time itself, and about our own experiences of time? How do those narrative approaches mirror or distort understandings of time that were available when these narratives were created? Our discussion-based class will engage with these questions. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 220NS. The Physics of Time and Space.** This course will explore time and space in the context of various physical laws that govern our universe. Students will examine these ideas on a conceptual and quantitative level within Newtonian mechanics, Einstein's theory of relativity, quantum mechanics, and cosmology. The course assumes no prior knowledge of these areas of physics. Several issues involving the "arrow of time" and the reality of time will also be analyzed. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 220SS. The Sociology of Time.** This course examines the concept of time as a symbolic entity, an artificial phenomenon constructed through human agency, deliberately manufactured to establish social consensus within a society, ensuring that all members partake in a collective consciousness in which rules of order and control governing behavior and productivity are routinely obeyed. Areas include the concept of "clocktime" by which a social member's daily and longitudinal attitudes, behaviors and beliefs are developed through an obsessive adherence to temporal dynamics; the capitalist conception of time as a commodity utilized to increase productivity and its ramifications for economic structure and wellbeing; and the role of time in the construction of cultural identity, breeding a sense of patriotism and ideological values. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 224CS. Evolution: Synthesis.** Evolution is one of the most revolutionary ideas of the last two hundred years. It continues to guide research in biology, medicine, anthropology, and many other fields. This connective experience will guide you through the science of genetics, the application of evolution to the study of human history, and the enduring controversies surrounding evolution today. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 224HU. Evolutionary Controversy.** Our modern understanding of both science and religion understand these human enterprises to be fundamentally opposed. This course will examine the relationship between religion and science by focusing on the theory of evolution. Bringing to this course an understanding of the scientific theory and the historical perspective on this theory, students will explore the relationship between science and religion from the earliest expressions of Darwin's idea to the contemporary challenges in courtrooms and classrooms. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 224NS. Evolutionary Theory.** Evolution is the unifying theory of the biological sciences. An understanding of evolution is necessary to understand all biological systems, from the molecular to the community level. This course will introduce students to the mechanisms underlying biological evolution and the evolutionary history of life on earth. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 224SS. Evolutionary History.** This course allows students to apply evolutionary theory and evidence to the study of history from the earliest beginnings of humanity to the recent past. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 226CS. Growing Pains: Facing the Challenges of Adolescence: Synthesis.** This connective course explores the theme "Growing Pains: Facing the Challenges of Adolescence." Each course follows a path of inquiry into one of the three general education areas: humanities, social science, and natural science. The first course will explore the role and journey of the adolescent in diverse cultures from a sociological perspective. Areas to be explored will encompass the social, emotional, and physical characteristics of adolescence. The second course will broaden the understanding of how the natural sciences constitute a lens for studying the challenges of adolescence. Students will read case studies to learn about the various challenges and unique struggles with adolescence. They will further investigate adolescence using primary research materials and will engage in exercises to understand how meaningful information can be gathered during studies. The third courses will use literature to analyze how the transition from childhood to adulthood is constructed and perceived as well as how it contributes to understanding human identity. Particular courses will build on and draw from one another as students explore the complexities of "growing pains." Students will demonstrate overall connectedness as a result of these courses as measured by selecting from a menu of projects in the 1-credit integration course. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 226HU. A Change Is Gonna Come.** This course is one of three connected to the theme "Growing Pains: The Challenges of Adolescence." Participants will examine several prominent "coming-of-age" novels, ranging from classics to contemporary texts, and analyze not only how this transition from childhood to adulthood is constructed and perceived but how it contributes to understanding human identity. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 226NS. Who Am I?** This course is one of three connected to the theme "Growing Pains: The Challenges of Adolescence." The subtitle "All About Me" is supported by first person cases, written by college students that enable participants to make connections from research to practice. This course will broaden one's understanding of how the Natural Sciences constitute a lens for studying the challenges of adolescents. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 226SS. We Are the World.** This course is one of three connected to the theme "Growing Pains: Facing the challenges of Adolescence." The subtitles "We Are the World" will explore the role of the adolescent in diverse cultures. This course will broaden one's understanding of how the Social Sciences, drawn from the disciplines of history, sociology and anthropology constitute a lens for studying the challenges of being an

adolescent. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 228CS. The Way Forward Adolescence: Integration.** The use of pharmaceutical substances to support human well-being is as old as humanity itself. Pharmaceutical development and use now play a central role within Western medical science -- even in the pursuit of mental well-being and recreation. This connective experience will explore: some deep historical and cultural roots of our society's attitudes towards drug use; the fundamentals of pharmacological principles underlying the actions of drugs on the human body as well as the limitations of therapeutic drugs; and the current policies, ethics, and political issues surrounding the pharmaceutical industry in the United States. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 228HU. The Journey to Modern Drug Culture.** Drugs (whether prescription, over-the-counter or illegal) play an enormous role in our society. But how did we get here? In this course we will explore how we humans have always made use of the pharmaceutical properties of substances; and how our cultural past shapes our present. We will dip into literature and art across the ages to trace the journey from ancient Western and Middle Eastern approaches to medicine to our present hopes and anxieties about the role of pharmaceutical therapy in society today. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 228NS. The Path of Drugs.** This course is an introduction to pharmacology on a biomedical and an economic standpoint. It will discuss the fundamental pharmacology principles underlying the actions of drugs on the human body and the reactions of the organ systems to various drugs based on the route of administration. The course will also address the economic and legal implications of therapy including but not limited to: drugs production and commercialization, prescription misuses and addictions, and limitations of therapeutic drugs. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 228SS. Policy, Ethics, and the Pharmaceutical Industry.** This course will introduce students to the policy, ethics, and political issues surrounding the pharmaceutical industry in the United States. Through lectures, discussions, and readings, we will explore the political processes and concerns which produce our current policy; examine the major issues being debated surrounding the creation and delivery of drug policy, including ethical issues. In addition, we will spend a few units looking, in detail, at the unusual challenges posed by the economics of drug policy. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 231CS. Altered States: People, Drugs and Alcohol: Synthesis.** Why and how do people seek to alter their consciousness? How are these substances made and what are the implications of their use? In this connective experience, we will examine the historical, social and scientific context surrounding drugs and alcohol. We will look in depth at the scientific processes that turn natural ingredients into alcohol and explore how alterations impact the experience of the consumer. We will review the history of drugs and alcohol used by people in the world and their impact on society, examining the physiological, psychological, social and legal aspects of various drugs. Finally, we will consider entheogens, chemical substance used in religious, shamanic, or spiritual contexts to achieve transcendent, or higher conscious, and examine the role entheogens have played in the formation and experience of world religions and world civilizations. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 231HU. Entheogens & Higher Consciousness.** What are entheogens? Is there such a thing as higher consciousness, and if so what is it? Why are entheogens illegal? What is the traditional use of entheogens, and is there a positive use of them in a modern society? This course will introduce students to a broad range of theoretical and literary texts that pose, and attempt to answer, some of the fundamental questions of higher consciousness. Students will read study and critique texts that represent diverse entheogenic experiences, as well as analyze how the various methodologies of achieving higher consciousness intersect with cultural categories such as race, ethnicity, class, and religion. Through class discussion, critical writing, and close reading of theory and fiction, students will examine the historical and cultural constructions of altered states of consciousness through entheogens, and analyze the ways that literature, music and art has informed, revisited and richly enhanced our understanding of what it means to achieve higher consciousness. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 231NS. The Science of Beer.** This course will investigate and examine scientific principles as they relate to the composition, formation, and analysis of beer. Topics will include chemistry basics, ingredients in the brewing process, enzymes and fermentable sugars, fermentation, and flavor chemistry. Students will engage in empirical techniques to critically examine components and products in the brewing process. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 231SS. Drugs, Behavior and Illness.** In this course, we examine the physiological, psychological, social and legal aspects of various drugs including alcohol and marijuana. We will explore substance use including the history of various substances and their spiritual uses, addiction disorders and co-occurring mental health diagnosis. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 237CS. Gender and Communication: Synthesis.** Gender is a fundamental organizing principle of society; for better or worse, we allow our assumptions regarding gender to shape how we interact with and perceive others. In this connective experience, we will explore the dimensions of gender, a concept no longer restricted solely to the definitions of men and women. We will explore research, which investigates the degree to which males and females are similar and/or different in the biological, cognitive, social, and emotional domains. The impact of gender on identity will be examined in a variety of contexts, such as leadership in the workplace, and the impact of gender inequality on the process of economic development and socio-political systems in developing countries. We will examine gender and its relationship to broader historical, social, and geopolitical contexts. We will address gendered communication, verbal and nonverbal, and how it changes based on where and with whom we communicate. Finally, we will explore film and literary texts that address some of the most fundamental issues of gender and identity, and analyze

intersections among gender and other categories of difference, such as class, race, religion, and national identity. Fulfills requirement: Connective Experience. 1 credit.

**COE 237HU. Gender and Communication.** This course represents a portion of a Connective Experience on Gender and Communication. Gendered communication encompasses a number of topics including how we communicate, both verbally and nonverbally, and how that communication changes based on where and with whom we communicate. In this course, students become acquainted with gender and communication theory. In order to apply those theories, students view films and read short literary texts with the purpose of analyzing depictions of gender and gendered communication. Through this combination of communicative theory, film, and literature, students gain insight into their own communicative styles and become well-versed in identifying, examining and addressing the literary and cinematic depictions of gendered communication. Fulfills requirement: Connective Experience. 3 credits.

**COE 237NS. The Science of Gender.** This course is part of a Connective Experience, which examines a broad spectrum of issues related to Gender and Identity. A primary focus will be to examine how scientific methodology is used to answer questions related to Gender Identity. Of central importance is the examination of empirical findings related to gender differences and similarities in biological, behavioral, cognitive, social, and emotional domains. This course will also involve a critical examination of the meaning of gender in the field of psychology and within broader society. Fulfills requirement: Connective Experience. 3 credits.

**COE 237SS. Gender in the Social Sciences.** What does it mean to be men and women? Why are these categories some of the primary organizing principles of society? Are men and women's roles based in biological realities or mere cultural fabrications? These are just some of the many critical and complex questions that social scientists have been asking for the last forty years. This course will survey the primary debates and discussions surrounding gender in the social sciences. Students will learn how to think about gender as social scientists, and to evaluate masculinity and femininity through the theoretical lens of social constructivism. Students will analyze both historical and contemporary scholarship in the fields of sociology, anthropology, education, and political science. Special attention will be paid to questions of gendered performance and power in popular culture, the home, the economy, and the workplace. Fulfills requirement: Connective Experience. 3 credits.

**COE 242CS. Traditions of Wellness: Synthesis.** Traditions of Wellness is a course designed to look at how well-being and illness are defined. From the viewpoint of the humanities, famous composers, poets, and artists who have suffered from mental health issues and the effect their illness had on their creative output will be studied. From the natural sciences approach, the culturally specific definitions of health and malaise, along with treatments and the scientific evidence for their effectiveness will be examined. Finally, using the social science lens, the uneven distribution of health, disease and healing in the population and the relationship to social structure, social process and culture will be investigated. Together, this connective experience will integrate perspectives on the blurred line between fitness and sickness, highlighting both the beauty and tragedy of this continuum. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 242HU. Musicians and Artists: The Impact of Mental Illness on the Creative Mind: Integration.** Students will study a number of famous composers, poets, and artists who have suffered from some form of mental illness and will consider the effect that their illness had on their creative output. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 242NS. The Science of Well-Being and the Treatments of Malaise.** This course is part of a Connective Experience which examines the cultural definitions of wellness and illness. Students will learn about treatments and the scientific evidence for their effectiveness. We will also explore the empirical evidence linking social and psychological belief systems to efficacy outcomes. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 242SS. Inequality and Well-Being.** This course will look at how health, disease and healing are distributed unevenly in the population and how this distribution is related to social structure, social process and culture. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 244CS. The Web of Life: Humans in the Environment: Synthesis.** Focusing on what the 19th century naturalist Alexander von Humboldt called the "web of life," this connective experience explores the complex material and symbolic relationships that connect human beings and human societies and cultures to the non-human natural world. Students will critically engage with diverse perspectives on these relationships from the disciplines of art, biology, and history, with an eye toward transcending conventional conceptual frameworks that sharply distinguish between "human society" and "nature." Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 244HU. Art for a Changing World: Studies in Environmental Art.** This course examines the field of Environmental Art, with an emphasis on how art has been used since the 1960s as a vehicle to improve our relationship with the natural world. Specific artists and works of nature-based public art will be explored through readings, films, and site visits. Students will study and research current environmental issues and prepare an art proposal that confronts a pertinent environmental issue. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 244NS. Naturalist Studies of Pennsylvania.** In this course, students will learn how to identify common plants and animals of Pennsylvania. Students will also investigate natural phenomena by designing, implementing and analyzing the results of field studies. This course will involve extensive fieldwork, and students should be prepared to work outdoors. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 244SS. The Triple Bottom Line: Planet, People, Profit.** This course will explore the relation between social, economic, and environmental factors influencing resource distribution and corporate initiatives. It will look at the role and impact which the corporate world and civil society play in regard to sustainability in the global marketplace. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 248CS. How We Know - Paradigm Change in the Enlightenment Period: Synthesis.** Starting with the Renaissance, Europeans rejected the authority of the Church in fields such as politics, history, science, and the arts, and emphasized the power of the humanity to understand the world in terms of reason and individual abilities. This connective course explores the paradigm change in epistemology - "how we know" - during the period of the Enlightenment (roughly the 15th to 18th centuries). The Enlightenment represented a turning point in western thinking that pointed forward to religious tolerance, liberalism, rational inquiry, new understanding of time, nationalism, and faith in progress. Through courses in music, Astronomy, and History, this connective experience will examine how these new ways of knowing, of using reason, and challenges to accepted wisdom were embedded in the social context of the time. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 248HU. The Enlightenment and Music.** This course will examine changes in musical practice and shifting attitudes about musical style during the Enlightenment period, with a focus on the 18th century. These reflected the increasingly cosmopolitan nature of society, changes in technology, believes about the importance of the individual consistent with Enlightenment ideals, and new ways of looking at the world that grew from changes in science. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 248NS. Star Stuff's Guide to the Galaxy.** This natural Science Connective course introduces the forces that shape the solar system, the galaxy, and the universe as well as the tools and methods used to observe them. It presents a review of the modern scientific view of the physical universe, with particular emphasis on how a paradigm change during the scientific revolution led to the new ways to study and understand our universe. Topics include the history of astronomy, astronomical technology, and the structure and evolution of astrophysical systems including the solar system, Sun other stars, and galaxies. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 248SS. Paths to Enlightenment.** This course addresses the history and philosophy of the Enlightenment of the late seventeenth and eighteenth centuries in Europe, North America, and Latin America. Topics of discussion will include new political and economic ideas such as liberalism and laissez-faire capitalism, the beginning of religious tolerance, experiments in science and education, and the ways in which colonialism and cross-cultural contacts changed the perspectives of the thinkers of the time. The course will also address the social history of the period in order to understand the society that produced Enlightenment ideas and how they circulated. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 253CS. Innovations: The Paths to Our American Identity: Synthesis.** The United States of America (Born on date: July 4th, 1776) is always on the world stage. Someone always seems to be concerned with the American economy, the American way of life, American politics and American opinion, among other issues. From Native Americans, to individuals from countries and cultures around the world, we are a collection of people who make our country more than the sum of our parts. Our thoughts, our words and our deeds make us uniquely American. These courses will examine how events, ideas and technologies shape who we are and how we, as Americans, contribute to the world. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 253HU. Music and Composing the American Persona.** Is there such a thing as truly American music? How does our music define us? Students will tackle these questions as they explore American music from the Civil War to present day. As they listen, students will work to identify musical elements in pieces, understand the historical context, and form an opinion on how music shapes us as Americans. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 253NS. American Science That Changed the World.** In this course, we will investigate several key scientific innovations, theories and findings of American Scientists. Beginning in colonial times, we will examine how American innovations have effected changes around the world- for better, or for worse. Further, tutorials, projects and experiments will challenge students to create a knowledge of how science is performed, how findings are interpreted, how studies undergo peer review and how information is disseminated. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 253SS. America: The First New Nation.** The United States has been called "the first new nation," the first modern state to organize political life and citizenship around an idea rather than ethnic or linguistic notions of peoplehood. This innovative "American Creed," focused on liberty, individual rights, and equality, however, could only offer a partial answer to the questions, "Who is an American?" and "What does it mean to be an American?" The Creed was accompanied by other ideas unique to the American experience, such as "the melting pot," "rugged individualism," and the "rags to riches" story. Each of these ideas became abiding myths to define American identity, but they were challenged by old contradictions, such as slavery, and adjusted in the face of new movements and events, such as successive waves of immigration, economic ups and downs, and innovations in technology and consumption. This course will examine the ideas that have defined this "new nation" and consider the notion that unites them all, American exceptionalism, to try to delineate the American character. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 265CS. Sexuality and Desire: Synthesis.** This connective experience will introduce students to the many complex ways in which sexual activity and desire are shaped by social relations, and to the ways that sexual practices and identities vary across a variety of different historical, cultural, and political contexts. Students will explore the representation of sexuality and desire in creative works of varied media covering the last several centuries. A review of biological influences on sexuality and sexual identity will consider how a range of factors, from intrauterine environment to evolutionary forces, may have shaped our sexual behavior. Finally, students will analyze sexuality's place in major institutions, as well as how it intersects with other cultural categories such as gender, race, ethnicity, and class. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 265HU. Sexuality and Desire in Literature and Film.** This course will explore the representation of sexuality and desire in creative works of varied media covering the last several centuries. The course will provide an overview of historical perspectives on human sexuality in order to demonstrate how our definitions of and frames for human sexual behavior have changed through time. Students will be introduced to key literary and filmic texts that originate from or represent a variety of time periods and orientations. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 265NS. The Science of Sexuality and Desire.** This course will provide an overview of biological and psychological influences on sexuality and sexual identity, including how a range of factors, from intrauterine environment to evolutionary forces, may have shaped our sexual behavior. By exploring the diverse range of sexual classifications, from heterosexual to homosexual, and asexual to intersex conditions, we will question the value of the term "normal" with regard to our sexuality. We will also examine the types of research methodologies used to understand sexual behavior and its biological bases in both humans and in animal models. Finally, we will explore the concept of "desire" within the framework of human sexual behavior. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 265SS. Sex and Sexuality in the Social Sciences.** This course will introduce students to the many complex ways in which sexual activity and desire are shaped by social relations, and to the ways that sexual practices and identities vary across a variety of different historical, cultural, and political contexts. Drawing on social construction theory, students will think "beyond" the body, and develop an understanding of human sexuality in relation to social and institutional processes. Students will analyze sexuality's place in major institutions, as well as how it intersects with other cultural categories such as gender, race, ethnicity, and class. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 269CS. Disability Studies: Synthesis.** Disability Studies is a multi-disciplinary field of study that examines the experiences and unmet needs of persons with disabilities in a variety of settings. This sequence of courses attempts to define "disability" and our culture's medical, technical, and artistic responses to person with disabilities in the context of online participatory culture, neurobiology, and the narrative arts. Students who take this sequence will gain practical and theoretical understandings of how the dominant culture marginalizes persons with disabilities and how attempts to bridge the gaps between different cultures of ability are active in our society. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 269HU. Heroes and Victims: Portrayals of Disability in Literature.** This course explores the ways that physical and mental disability are portrayed in narrative fiction and how the theme or condition of disability is used by artists to either confirm or challenge values of a dominant ("abled") culture in novels, short stories, plays and films. Critical responses to such art and the political and cultural uses it is put to are also analyzed. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 269NS. Biological Foundations of Disabilities.** At some point in our lives, most of us will experience some condition or disorder, whether lifelong or temporary, that can be considered a "disability." In this course, we will explore a wide variety of disorders (visual, auditory, motor, cognitive, and psychological) that are commonly labeled as "disabilities." Understanding the biological bases of these disorders will be a primary focus. We will consider the effectiveness of typical interventions designed to minimize the severity of specific disorders, and analyze the cost/benefit impact of these for the individual. Finally, we will investigate the various research strategies used to advance our understanding of disability. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 269SS. Paths to Inclusivity.** Paths to Inclusivity provides an overview of the purposeful, unequal treatment experienced by people with disabilities in the U. S. The course explores the concept of disability in health, educational, economic, and legal systems, as well as the perspectives of people with disabilities themselves. The multiple connections between the study of disability and other identities including class, race, ethnicity, gender and sexual orientation will also be examined, along with a comparative look at how disability is treated across cultures. The course critically examines factors that support systemic oppression, and methods and strategies of moving toward a more inclusive society. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 273CS. Energy: Synthesis.** One of the greatest challenges before humanity is to find sufficient sources of sustainable energy quickly enough to avoid severe climate change. This connective experience connects the science behind this existential challenge with the deep history of humanity's search for new forms of energy to the various meanings that people imbued the energy of the industrial and post-industrial revolutions. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 273HU. Threat and Opportunity: Artistic Reflections of Energy.** This course analyzes the main cultural concepts through which literature, art, and film represent energy and discuss issues related to it. Energy is discussed, among others, as a factor determining many aspects of life, as opportunity, dangerous force, or a source of dependency. Concepts analyzed include, speed, machine, and sustainability. The topics cover from the 18th century through today with a focus on industrialization, before and after WWI, and the environmental movement. Geographical focus is on Germany (but also discusses art movements from Italy, France, and Great Britain) and compares to America. Students will acquire skills in analyzing texts and art works, critical thinking and intercultural competence. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 273NS. The Evolution and Science of Global Energy Use.** This course covers the scientific theory behind energy production, conversion, and consumption. Past, current and future methods as well as environmental and economic advantages and disadvantages of each technology will be discussed. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 273SS. Energy Revolutions.** Human history has progressed when people mastered new forms of energy. Fire allowed our ancestors to develop more efficient ways to ingest calories; a fact that unleashed a host of physical and social changes. The mastery of agriculture was also a form of harnessing new forms of biological energy, which in turn spurred population growth and social transformations. The industrial revolution is

merely the latest iteration of the revolutionary transformations in human life. Beginning in the 1740s, and continuing through the present, the industrial revolution has transformed human existence throughout the world. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 276CS. The Future of Science: Uncertainty in Science, Thought, and Society: Synthesis.** This course considers Quantum Physics as an example of the uncertainty inherent in science. Students will learn the theories of knowledge implicit in the major interpretations of Quantum Physics and explore the intersections between science, politics and culture. This connective experience requires familiarity with algebra and trigonometry. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 276HU. Minds and Other Ideas.** Mind and Other Ideas (MOI) examines theories of knowledge beginning with the Ancient Greeks and continuing to the modern period. In addition to studying theories ranging from rationalism to empiricism and skepticism, MOI will consider how different interpretations of Quantum Physics are grounded in epistemological assumptions. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 276NS. Quantum Mysteries.** This course explores four mysterious aspects of nature: the lumpiness of physical quantities, wave-particle duality, action at a distance, and the meaning of quantum theory. We ask how these mysteries emerge from experiments, and how the mysteries are addressed by quantum theory. We learn the subset of quantum theory used to describe experiments with only two or three possible outcomes. We study Stern-Gerlach experiments and the evidence they provide for the theory. The course requires familiarity with algebra and trigonometry. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 276SS. The Quest: Understanding and Uncertainty in History, Politics and Science.** This course will introduce students to the history of science, to approaches in the interpretation of history, and to the politics of science. Each student will participate in group projects and will write an individual term paper on a topic related to uncertainty in history, politics, and science policy. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 282CS. Open Minds: Synthesis.** Are opinions and attitudes formed based on reason or emotion? Or are appeals to reason ultimately just appeals to power? In this course, we will examine opinion formation about public policy from scientific, social scientific and philosophical perspectives. Students consider the impact and importance of different cultural, ideological, and religious backgrounds in the evaluation of public policy. They also develop scientific surveys to measure the effect of rational and emotional persuasion concerning issues. Finally, they examine the extent to which theories of knowledge and value are grounded in emotion, reason, or some sort of synthesis of each. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 1 credit.

**COE 282HU. The Logic of Persuasion.** Examines both the moral theories and logical structure supporting social arguments. Students will learn to uncover the moral presuppositions behind arguments and to identify their logical structure and flaws. The course consists of three main parts: a study of logical argument; a survey of ethical theories; and application of logic and ethical theory to the analysis of social debates. In the first unit, students will learn to distinguish formally valid from invalid arguments and be able to identify informal fallacies. In the second unit, students will learn the fundamentals of the major ethical theories from primary readings in Aristotle, Bentham, and Kant. In the final unit, Students will use logical and ethical principles to critique arguments in current social issues including debates about free markets, affirmative action, and marriage rights. Fulfills requirement: Connective Experience. Corequisite: students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 282NS. The Science of Opinion.** Are opinions and attitudes rationally or irrationally formed? And what, if anything, can change minds? In this course, we will explore what we think we know about the psychology of opinion formation, viewpoint entanglement, and the role of rational argument versus more emotional appeals in changing minds. This course is part of the Open Minds Connective Experience. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 282SS. Open Futures.** This course will introduce students to contrasting policy options and to the value of considering diverse perspectives in the identification and solution of problems facing society. Public policy will provide the primary focus - that is government efforts to solve major problems in the economy, law enforcement, environment, business practice etc. The course will develop rhetorical skills in debate and argument, and skills in the analysis of policy. Fulfills requirement: Connective Experience. Students must register for all four courses in this Connective Experience in the same academic year. All courses carry the same course number. 3 credits.

**COE 299CS. Connective Synthesis.** This course completes the Connective Experience requirement of the Constellation LVC program. Students will be guided and evaluated in the task of integrating the three Connective Experience courses. Students must demonstrate the contributions made and insights gleaned from these courses (Natural Sciences, Humanities, Social Sciences), and address how the courses altogether have developed their core competencies (Written and Oral Communication, Critical Reading and Analysis, Information Literacy, Quantitative Reasoning, Intercultural Competence, Problem Solving, and Integration). Fulfills requirement: Connective Experience. This course is open to transfer students, and those who studied abroad, who have taken equivalent Connective Experience courses at another institution or to other students who have received permission to substitute this course for a standard Connective Integration course. 1 credit.

**CRJ 110. Introduction to Criminal Justice.** A sociological, historical, and philosophical examination of punishment and the criminal justice system. Included will be a summary of the role and impact of the courts, police, and corrections within our criminal justice system. Contemporary issues to include the death penalty, sentencing of juveniles, reentry and incarceration will be examined. 3 credits.

**CRJ 210. Ethics in Criminal Justice.** Emphasis is placed on professional integrity and leadership skills that support laws, policies and procedures in criminal justice. Students will learn the significance of ethics and to reflect on matters pertinent to criminal justice. Additional topics may include use of deadly force, civilian review boards and police corruption. Prerequisite: CRJ 110.3 credits.

**CRJ 220. Forensic Evidence.** This course involves the application of scientific methods to solving crimes. The course will explore the many ways in which an offender leaves evidence behind at a crime scene and carries evidence away from that crime scene. A range of topics will be covered including, but not limited to: ballistics, DNA, fingerprints, tire prints, odontology and entomology. Prerequisite: CRJ 110.3 credits.

**CRJ 221. Crime Scene Investigation.** For evidence to be used in court, it must be identified, collected, preserved and properly evaluated. This course will be a detailed description of the techniques, equipment and strategies for effective evidence collection and crime scene processing. We will also explore the difference between how Hollywood has portrayed crime scene "experts" and how it works in the real world. Prerequisite: CRJ 110 or SOC 110.3 credits.

**CRJ 225. Women in the Criminal Justice System.** This course will explore the roles of women in the criminal justice system and examine gender issues in relation to the practitioner, the offender, the victim and within criminal justice agencies. This course will further students' understanding of the issues related to gender and the criminal justice system. Prerequisite: CRJ 110.3 credits.

**CRJ 245. Violent Crimes: Homicide and Sexual Offenses.** The course will examine theories of violence; the subculture of violence; gender, class, race and violent crime. It will explore the history and current practices employed by the criminal justice system to address violent crimes with an emphasis on homicide and sex offenses. It will discuss the motives and the characteristics of those who commit violent crimes and the criminal justice systems approach to assessment, treatment and management. Prerequisite: CRJ 110 or SOC 110.3 credits.

**CRJ 260. Introduction to Corrections.** This course will provide an in-depth analysis of the history of corrections in America. It will include current contemporary issues pertaining to punishment, rehabilitation, restorative justice, correctional administration, policies and procedures and the prison client. Prerequisite: CRJ 110.3 credits.

**CRJ 278. Juvenile Justice.** An examination of the causes and effects of juvenile delinquency, the juvenile justice system and treatment programs for the juvenile offender. Prerequisite: CRJ 110.3 credits.

**CRJ 281. Police and Society.** This course is an overview of the process of policing, police behavior, organization, operations and historical perspectives. The relationship between the police and the public is examined, as are contemporary issues in the field of law enforcement. Prerequisites: CRJ 110.3 credits.

**CRJ 282. Emergency Management.** This course is an introduction to the topic of emergency management and disaster preparedness. Students are introduced to the philosophy, concepts, and principles of emergency management. The focus is on the examination of the four stages of emergency management; preparedness, response, mitigation, and recovery. Prerequisites: CRJ 110.3 credits.

**CRJ 286. Homeland Security.** This course is an introduction to the topic of Homeland Security. The course will be conducted as a seminar. Through group work, practical exercises, and real-world case studies you will be introduced to the philosophy, terms, principles, and concepts of Homeland Security. The focus is on an overview and examination of the Homeland Security Enterprise, The Department of Homeland Security, (DHS), terrorist threats, hazards, the intelligence community, and career fields within Homeland Security. Prerequisites: CRJ 110 or SOC 110.3 credits.

**CRJ 290. Special Topics in Criminal Justice.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**CRJ 310. Research Methods for Social Sciences.** This laboratory course builds skills in basic data management, statistical analysis, and interpretation of statistical information. The course reviews how to interpret both descriptive and inferential statistical analysis. The skills acquired in this lab are employed in research methods to aide students in the design, analysis, and presentation of their research project. Fulfills requirement: Quantitative Reasoning. Prerequisite: CRJ 110.3 credits. [This course is cross-listed with SOC 310]

**CRJ 311. Research Statistics for Social Science.** Experiential-based course covering fundamental concepts and problems in social science research. Topics include ethics or research on human behavior, design, measurement, sampling, and interviewing and questionnaire construction. There is an emphasis on four research methods: available data, survey research, experiments, and field research. Prerequisite: CRJ 310.3 credits. [This course is cross-listed with SOC 311]

**CRJ 331. Criminology.** This course will focus on the criminological framework of the study of crime. It will offer an analytical structure in order to understand the facts and criminological patterns and trends. It will explore the field of criminological explanation to include definitions of crime, criminal activity, and how theories are integrated within the criminal justice system. It will also examine the extent and nature of victimization. Prerequisite: CRJ 110.3 credits.

**CRJ 336. Legal Procedures: Rights of the Accused.** This course covers the rights of the accused included in the 4th, 5th, 6th, 8th and 14th Amendments. It deals with legal procedures and their applicability to common criminal justice situations and issues. In addition to examining the legal procedures relevant to police--citizen contacts, Supreme Court decisions affecting law enforcement will be discussed. Topics covered include search and seizure, search warrants, stop and frisk, interviews, interrogations and other legal decisions affording legal protection to the accused. Prerequisite: CRJ 110.3 credits.

**CRJ 360. Corrections: Management and Policy.** This course provides students with an in-depth discussion of corrections management and prisoner's rights. Constitutional protections and the impact on prison operations are examined. First, Fourth, Fifth and Eighth Amendment rights of the incarcerated are examined. Due Process and other rights of incarcerated populations are discussed. Prerequisite: CRJ 110 and CRJ 260.3 credits.

**CRJ 400. Internship.** Field experience for sociology or criminal justice majors. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisites: CRJ 110 or SOC 110, and CRJ 499. 1-12 credits.

**CRJ 499. Senior Seminar.** A critical analysis of the selected topic: Inequality. This course will specifically focus on poverty and the impact of adverse child experiences on human outcomes. The course will be conducted as a seminar with a significant portion using a service learning format. This is a capstone course, required of all graduating Sociology and Criminal Justice majors. Fulfills requirement: Immersive Experience. Prerequisite: CRJ 110.3 credits.

**CSD 101. Introduction to Communication Sciences and Disorders.** These rapidly growing interdisciplinary professions are devoted to helping individuals manage or overcome communication challenges. Students will gain a general understanding of prevention, evaluation, and rehabilitation issues for persons with speech, language, and hearing disorders in clinical and educational settings. 3 credits.

**CSD 105. Anatomy and Physiology of the Speech Mechanism.** A study of the anatomy and physiology of structures involved in speech, language, and swallowing. Course includes the anatomical and physiological mechanisms of phonation, and articulation. Also studied is the central nervous system's relationship to speech mechanisms. Prerequisite: EXSC 101/L. Restricted to Communication & Sciences Disorders majors only. 4 credits.

**CSD 110. Introduction to Research and Writing in Communication Sciences and Disorders.** The focus of this course is to provide the foundation of research literacy and understand the link between research to evidence-based practice in the field of speech-language pathology. Prerequisite: CSD 101. Restricted to CSD majors. 3 credits.

**CSD 220. Speech and Language Development.** This course is an examination of early speech development and the articulatory system. Language development related to the core areas of language competence: phonology, morphology, syntax, semantics and pragmatics will also be explored. Prerequisite: CSD 101 and 105. 3 credits.

**CSD 231. Phonetics.** A study of phonetic theories and the use of International Phonetic Alphabet symbols in analyzing, categorizing, and transcribing the sounds of the world's languages, focusing on American English. The course emphasizes understanding the processes involved in the production of specific phonemes. The laboratory section of the course focuses on developing students' skills in broad and narrow transcription. 3 credits.

**CSD 311. Audiology I.** Course examines the principles of auditory reception. Students will study the classification of hearing disorders and the behavioral and electro physical measurement of hearing, including subjective and objective testing procedures. Prerequisite: CSD 105. 3 credits.

**CSD 312. Aural Rehabilitation.** The study of the fundamental aspects of auditory rehabilitation, including individual and group amplification systems, auditory training, speech reading, and counseling with children and adults. Prerequisite: CSD 221, 311. 3 credits.

**CSD 321. Speech Science.** This course introduces students to the theories of speech and the clinical applications. Specifically, the course addresses the neurophysiology of the speech mechanism, speech perceptions, and speech production. An emphasis will be placed on normal speech production and perception. Prerequisite: CSD-105. 3 credits.

**CSD 324. Neuroscience Communication.** This course provides a thorough understanding of nervous system anatomy and physiology as it relates to speech, language, and hearing. Principles of molecular biology, systems theory, neuromuscular control, somatosensory processing and complex cognitive function are included. Select communication disorders are discussed to highlight the effects of breakdowns in nervous system function during speech, language, and hearing processes. Prerequisite: CSD 105, and EXSC 101. 3 credits.

**CSD 350. Introduction to Clinical Practicum.** This course is required as the initial field experience for speech pathology and audiology majors and is designed to introduce students to general therapy and assessment procedures across the disciplines. The course provides a supervised clinical experience in which the student clinician observes individuals how have various speech, language, or hearing impairments under the supervision of a speech-language pathologist or audiologist. Students will learn the role of a speech language pathologist and the scope of the profession. They will also address ethical consideration of the profession. Prerequisite: CSD 101, 105, 220, 231, and 321. 3 credits.

**CSD 351. Multicultural Issues in Communication Sciences and Disorders.** Students will learn to identify cultural and linguistic differences that may have an impact on the speech and language of individuals from diverse backgrounds. Students will be able to describe normal acquisition in bilingual children and contrast differences from communication disorders. Fulfills requirement: Intercultural Competence. Prerequisite: CSD 105, and CSD 220. 3 credits.

**DCOM 130. Principles of Information Design.** This class surveys the principles and practices of information design, information architecture, and interaction design. Students will learn and practice human-centered design methods in designing meaningful and effective interfaces in which users interact with information. Prerequisite: freshman or sophomore standing, or permission of the instructor. Prerequisite: freshman or sophomore standing, or permission of the instructor. 3 credits.

**DCOM 131. Usability Design and Testing.** The course emphasizes planning, conducting, and analyzing usability tests. The course will teach the basic concepts of usability research. Using the principles and techniques of usability testing, students will research the effectiveness of online and print documents, and physical objects, using video and digital equipment, with emphasis on rhetorical effectiveness and usability of information design and architecture, graphics, text, design, and format. Prerequisite: DCOM 130, or permission of the instructor. 3 credits.

**DCOM 150. Fundamentals of Design.** An introduction to the fundamental elements of design. Students work with graphic symbols, theories of visual perception, principles of composition, and color interaction in a variety of studio projects. The emphasis of the course will be placed on the design process as students develop their ability to communicate their ideas through the use of traditional and electronic media. 3 credits.

**DCOM 151. Digital Graphic Design.** The course will focus on blending the creative and technical aspects of developing electronic images and layouts. Students will apply traditional design methods and techniques to the electronic canvas. Additionally, the course will serve to familiarize students with industry standard software and procedures for producing creative work for a variety of media. Prerequisite: DCOM 150, or permission of the instructor. Prerequisite: DCOM 150, or permission of the instructor. 3 credits.

**DCOM 170. Web Markup and Layout.** This course will cover the use of HTML5, CSS3, and basic JavaScript to create functioning web sites. The course will enable students to incorporate critical thinking skills and integrate web-based principles to develop hands-on projects. The course will be conducted through lectures, readings, tests, and assignments. 3 credits.

**DCOM 261. E-Business Strategy.** An exploration of the way businesses use technology to operate effectively. The course will focus on how businesses generate, manage, store, and distribute information that is key to performance of business objectives. Topics will include Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), Supply Chain Management (SCM), e-Marketing, and Business Intelligence. Prerequisites: DCOM 260 or permission of the instructor. 3 credits.

**DCOM 262. Introduction to Entrepreneurship and Innovation.** This course examines the benefits and challenges of entrepreneurship and the process of innovation. The class explores the business models, processes, and business functions that entrepreneurs and innovators apply to effectively solve problems and create new products, services, and experiences. 3 credits.

**DCOM 263. Information Technology Management.** This course explores how organizations use and integrate technology in their business operations. An emphasis is placed on understanding and applying the business models and strategies that support technology and business decisions. 3 credits.

**DCOM 270. Programming for Digital Media.** This course is designed to teach the fundamentals for creating dynamic Web sites using JavaScript. With a basic understanding of the Web layout and design process, the student will learn the basic workflows of Web development and learn how to use JavaScript to create effective and interactive web pages. Prerequisite: DCOM 170.3 credits.

**DCOM 271. Databases in Design.** This course is designed to teach the fundamentals of databases and how they might be used to create dynamic and data driven Web pages. With an understanding of Web layout and design process, the student will learn the basics of industry standard languages for accessing databases (such as PHP, Ajax or MySQL) and use these languages to design and develop data-driven sites and networked applications. Prerequisite: DCOM 270.3 credits.

**DCOM 280. Technical Communications for Digital Media.** Technical communications requires students understand the basics of the human-centered design process, while focusing primarily on the use of writing and video to clearly and precisely communicate ideas. Students will develop copy and content appropriate to a given audience, client needs and goals, and context. The course will emphasize iterative design, prototyping and usability testing of acts of persuasive and informative writing. Prerequisite: DCOM 130 and DCOM 131, or by permission of the instructor. 3 credits.

**DCOM 281. Storytelling for Online Media.** This class will give students "digital first" storytelling skills demanded by all online publishers. "Digital first" environments mean that students will engage in data gathering, creating stories, choosing the best digital platform for each story, tailoring the story to the chosen medium, and gauging the effectiveness of the communication and measuring reader engagement through the use of success metrics and analytics. Prerequisite: DCOM 130, DCOM 131, DCOM 151, and DCOM 270.3 credits.

**DCOM 282. Storytelling for Digital Media I.** Those who create and maintain a kind of website or networked communication platform - for business, news, commerce, entertainment, education, government - can only succeed in communicating information effectively to their users with careful attention to content strategy and content creation. Writers and editors have to engage audiences and provide them with the narratives that best tell their organizations' stories. In other words, content creators have to be good storytellers. In this course, the first half of a two-semester sequence, students will focus on considering the human-centered design process as they research and create content that follows professional writing standards. Prerequisite: DCOM 130 and DCOM 131.3 credits.

**DCOM 283. Storytelling for Digital Media II.** Once an organization has developed a coherent and audience-aware content strategy for its online properties, it must present content with the highest writing and production values in order to fulfill and measure the goals of that strategy. This course will build on the writing and content strategy skills students gained in DCOM 282 and will implement the human-centered design process as students choose the best way to feature relevant content on a digital platform. They will focus on the technical and artistic skills of storytelling that fulfills planned and persuasive messaging. They will also fulfill content strategy goals by solving problems related to managing and assessing content once it is published. Prerequisite: DCOM 280 or 282.3 credits.

**DCOM 290. Special Topics.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 293. Special Topics in User Experience.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 294. Special Topics in Video.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 295. Special Topics in Design.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 296. Special Topics in Business Technology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 297. Special Topics in Programming.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 298. Special Topics in Communications.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 299. Portfolio Defense.** Portfolio: A formal collection of the student's completed work to be presented before the Design, Media and Technology faculty and students as part of the student's formal request to register for an Internship. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisites: DCOM 130, DCOM 131, DCOM 151, DCOM 260, DCOM 270, and DCOM 280, or permission of the instructor. Corequisites: DCOM 261, DCOM 271 and DCOM 281.0 credits. [This course is cross-listed with IXD 299]

**DCOM 301. Ad Agency.** This is a student run course. Students will work together to solve problems in a real-world environment reflecting a functioning ad agency. The direction of the class will be driven by the needs of the clients and the ideas and concepts created by the students. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Registration by instructor permission only. 1 credit.

**DCOM 311. Information Law and Ethics.** Students will begin with a foundation in media law and ethical reasoning and examine both legal and ethical questions surrounding the use of digital media. They will then move on to examine the ways that the Web and digital media platforms have transformed traditional understandings of concepts like intellectual property rights, privacy, and free speech. Students will work with case studies, national and international legal documents, academic research, and company guidelines in order to understand whether legal strictures

or ethical reasoning should guide personal, governmental, and corporate behavior. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112, and junior or senior standing. 3 credits.

**DCOM 333. Experience Design.** The design of experiences can take many forms from riding a ride at an amusement park, to attending a concert, to buying milk or computers or underwear at a brick and mortar store, to finalizing the purchase of a book online. Though varied, all of these experiences share at least one trait—they were designed. The primary approach for the course will be case study analysis, including on-site visits to local parks, museums and other sites. Theories and concepts of experience design will be presented in context while analyzing site designs. Prerequisite: Junior standing. 3 credits. [This course is cross-listed with IXD 333]

**DCOM 340. Videography.** Videography will focus on developing facility with scripting/storyboarding and techniques of using a video camera to capture moving images. Students will learn scripting/storyboarding, videography (lighting, composition, shot selection) and basic non-linear editing. Satisfies the video and communications concentrations. 3 credits.

**DCOM 341. Editing/Post-Production.** Editing/Post-Production will teach students how to use the video editing and post-production process to tell stories using still and moving images and sounds. Students will learn non-linear editing for video and gain facility with the software and workflows of the video post-production process. Satisfies the video, design and communications concentrations. 3 credits.

**DCOM 343. Sound Design.** Sound Design will teach students how sound contributes to storytelling and atmosphere. Students will study best practices in how to create and record audio, Foley effects, sound effects, and score for use in video and other digital media (such as video games). Additionally, students will study audio editing and basic non-linear video editing workflows and software. Class will be composed of small hands-on projects and a large collaborative project. Satisfies the design, video, and communications concentrations. 3 credits.

**DCOM 347. Motion Graphics.** This course will provide an introduction to motion graphics and time-based media as a way to enhance concept driven projects. The focus of the class will be industry-based projects with an emphasis on the production workflow and process. Satisfies design and video concentrations. Prerequisite: DCOM 150 and DCOM 151, or permission of the instructor. 3 credits.

**DCOM 350. Corporate Branding.** The course will enable students to incorporate their knowledge and design skills in producing branding campaigns. The course will be conducted on a case study basis and focus on the practical application of branding guidelines across a variety of design elements. Satisfies design and Business Technology concentrations. Prerequisite: DCOM 150 and DCOM 151, or by permission of the instructor. 3 credits.

**DCOM 351. Prototyping.** This course provides students with an opportunity to explore, concept, and implement the production of prototypes. It will emphasize hands on learning that focuses on producing creative solutions for a variety of design problems. Students will develop functioning prototypes in a variety of media, both virtual and physical. The course will also explore concepts of usability, 3-D design, and functionality. Satisfies the design and UX concentrations. Prerequisite: DCOM 150 and DCOM 151. 3 credits. [This course is cross-listed with IXD 351]

**DCOM 352. Package Design.** This course will introduce various concepts for the development of packaging in a 3-D format using flat materials. It will focus on producing creative solutions for a variety of packaging needs. Students will develop functioning prototypes for a variety of different products and clients. The course will also explore concepts of mass production and constructing unique types of packaging. Satisfies the design concentration. Prerequisite: DCOM 150 and DCOM 151. 3 credits.

**DCOM 375. Advanced Website Design.** Students will learn programming and scripting for the web. This should teach the importance of clean, semantic markup coupled with advanced CSS techniques, cross browser compatibility, web accessibility, and web standards. Students will learn to create sophisticated presentations and interactive effects, including typographical and layout control, and interactive elements. Prerequisite: DCOM 130. 3 credits.

**DCOM 380. Advertising.** Students will learn how advertising is used to create awareness in audiences, to persuade them, and move them to action, drawing from theories and practices established by academics and advertising professionals in design, psychology and rhetoric. Students will learn about the advertising industry, how advertisements are commonly structured— particularly on digital platforms— read case studies of both successful and disastrous brand audience interactions, and learn how to gauge the effectiveness of content and measure audience engagement through the use of success metrics and analytics. They will also examine the various moderation tools and philosophies used by news organizations, commercial comment spaces, and social media sites, and develop guidelines for best moderation practices. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112, and junior or senior standing. 3 credits.

**DCOM 382. Editing for Web and Mobile Communication.** The role of digital editor for real-time content is like that of a live-TV producer—involving fact checking, rewriting copy, performing format and design maintenance, editing graphic elements, overseeing an organization's social media outlets, making informed and ethical decisions, managing online platforms, and analyzing success metrics and analytics to measure the effectiveness of their content. Editors manage a variety of web and networked content that should communicate information to audiences clearly, accurately, and effectively. Students will learn to manage web platforms such as Word Press and Moveable Type; be introduced to basic content management systems, learn how to work with writers, graphic designers, and programmers by understanding their restrictions and concerns; perform follow-up research to rate effectiveness of content; and adhere to current industry communication standards. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112. 3 credits.

**DCOM 383. Public Relations.** This course emphasizes skills in writing, digital media, and analytics used by public relations professionals as they seek to promote good communications between organizations and their publics, between members of organizations, and between organizations and the media. We will focus on public relations communications across social and proprietary media platforms. The class will also introduce students to the elements of a successful public relations campaign and challenge them to create their own promotions projects. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112. 3 credits.

**DCOM 385. Storytelling with Data.** Those who can "read" data sets can ferret out untold narratives buried in them and are of enormous value to the institutions that employ them. Some data is consulted for specific purposes by individuals maintaining governmental, educational, and commercial organizations, but the potential for making the data tell stories exists and has already been explored by those who practice data journalism and other kinds of data-driven investigations. Students who plan careers not just in media but in any business or academic pursuit can learn to contribute more to their areas of interest by learning how to arrange data sets to answer questions, to follow through with research and

interviews, to write accurate narratives that explain the process and findings of examining data sets, and to create clear, attractive infographics and data visualizations to supplement traditional storytelling. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112, and junior or senior standing. 3 credits.

**DCOM 387. Social Media: History, Theory and Practice.** Social media connects organizations, companies, and individuals throughout the world, fostering interaction, collaboration, discussion, and community. And it is not surprising that social media networking is the number one online activity of people in the United States. Students in this course will study the history and theory of social media. They will also put into practice specific marketing, community building, and institutional support activities that take place through social media channels. This course is for students who wish to obtain analytic and practice-based skills for careers in media, Web-based companies, and publicity in any form. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112. 3 credits.

**DCOM 393. Special Topics in User Experience.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 394. Special Topics in Video.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 395. Special Topics in Design.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 396. Special Topics in Business Technology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 397. Special Topics in Programming.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 398. Special Topics in Communications.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 400. Internship.** Internship in Digital Communications. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**DCOM 410. Capstone - Project Management.** This capstone course teaches the theory and application of planning projects in the field of digital communications. The course covers principles of project management, research, and project strategy. Additionally, topics of professionalism, client interface, modes of communication, and collaborative group theory and practice are explored. 3 credits. [This course is cross-listed with IXD 410]

**DCOM 411. Capstone-Research and Development.** This course simulates the collaborative and interdisciplinary environment of the field of digital communications and emphasizes usability testing in the identification of a problem, in formative testing and prototyping of potential design ideas and summative testing of the final project. The course takes the integrative theory and skills from the areas of concentration and builds upon the theory and application explored in the first Capstone course to develop a multi-disciplinary team of students to deliver an appropriate project. 3 credits. [This course is cross-listed with IXD 411]

**DCOM 431. Advanced Usability.** Advanced Usability explores topics in the field that challenge students with methods, tests, and subjects beyond the introductory level. The course addresses advanced tools such as eye tracking and 3D prototyping; advanced methods, such as field-testing and ethnography; and unique applications, such as unique test populations and iterative software development. The course focuses on the flexibility of the test team in selecting the appropriate test method, applying appropriate pre and posttest activities, and collecting valid data. Expert and Heuristic methods for identifying the areas and activities for testing will also be examined. Satisfies UX concentration. Prerequisite: DCOM 131, or permission of the instructor. 3 credits.

**DCOM 462. Customer Experience Management.** Customer Experience Management (CEM) explores the theory and methods that businesses use to engage and retain customers. This course examines the theory and application of User Centered Design principles to customer interaction. Customer engagement is broadly expanded in the course to include all types of businesses, including non-profit businesses, government, and even internal processes and relationships. The course will also feature computer software platforms that support both analytical and transactional Customer Relationship Management objectives. Satisfies business technology concentration. Prerequisite: DCOM 260, or permission of the instructor. 3 credits.

**DCOM 465. Internet Marketing.** The course examines the principles and processes of Internet Marketing. Students will examine current topics including search engine advertising; social media, online advertising strategies and models; metrics, and ethics. The course will also integrate a comparison and contrast of online promotion to traditional channels and extensively employ case studies. Satisfies the business technology and communications concentrations. Prerequisite: DCOM 260, or permission of the instructor. 3 credits.

**DCOM 466. Innovation.** Why are some companies considered innovative and others stodgy? What cultural, organizational, and personal elements make innovation in technology possible? This course attempts to answer these questions by exploring how technology ideas are created, fostered, and shared. The course will study innovation from both theoretical and applied perspectives using case studies, creative exercises, research, and simulations as learning experiences. Satisfies business technology concentration. Prerequisite: DCOM 261. 3 credits.

**DCOM 468. E-Commerce.** An exploration of the important technologies related to doing business on the Internet. Topics include e-commerce, advertising, customer support, and business-to-business applications. Emphasis on how businesses implement these technologies, resource requirements, and cost-to-benefit analysis. 3 credits.

**DCOM 493. Special Topics in User Experience.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 494. Special Topics in Video.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: Portfolio (DCOM 099/299). 3 credits.

**DCOM 495. Special Topics in Design.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 496. Special Topics in Business Technology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 497. Special Topics in Programming.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**DCOM 498. Special Topics in Communications.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: Portfolio (DCOM 099/299). 3 credits.

**ECE 110. Child Development I.** This course will provide an overview of early childhood educators' beliefs that inquiry learning through curriculum integration is the most effective way to teach young children. The emergence of constructivism and the age-related patterns of intellectual growth will be examined. This knowledge will be essential for pre-service teachers learning to make competent decisions about curriculum and teaching methodology. The delivery approach will follow a theory-to-practice format so students can "see" how an understanding of theories of development and relationships enhances practice and planning. This course requires updated federal background clearances for field component. Course restricted to ECE majors only. Non-majors may register with permission of the Education department chair 3 credits.

**ECE 115. Child Development II.** This course will provide an understanding of the overall patterns of child development and learning. The student will gain insight into the relationships between child development, learning and teaching and the variation from these typical patterns. The emphasis will be placed on reviewing the characteristics of children at different ages and stages of development. Specific developmental appropriate practices for school-aged children will be examined. Delivery approach will include, but not be limited to, authentic classroom videos, analyzing and responding to real student and teacher artifacts, case studies and simulations. Prerequisite: ECE 110.3 credits.

**ECE 199. Freshman Seminar.** Freshman Seminar - This course is designed to acclimate freshman education majors (ECE and ECE/SPE) to fieldwork policies and procedures and clarify students' interests and long-term goals in education. Additional topics include career development, professional dispositions, and academic advising. This will be a satisfactory/unsatisfactory course for all students. Graded pass/fail. This course may be repeated for credit as topic changes. 0 credits.

**ECE 210. Family Partnerships.** This course will focus on the developmental tasks and perspectives of the adults in children's lives. Students will spend time understanding the roles of parents, teachers, and other caregivers in the lives of young children as they work to form caring relationships with those around them. The delivery approach will follow a theory-to-practice format so students can "see" how an understanding of theories of development and relationships enhances practice. The professor will promote experiential learning, critical thinking, synthesis, planning, evaluation and action. 3 credits.

**ECE 220. Theory and Practices.** This course will involve an in-depth examination of child development and learning, family and community relationships, effective assessment strategies developmentally effective approaches to teaching and learning and ethical guidelines related to early childhood practice. Students will have opportunities to view and design challenging learning environments. They will practice using observation, documentation and other appropriate assessment tools and approaches in field experiences. Delivery approach will include, but not be limited to, analyzing and responding to authentic classroom artifacts, case study analysis, simulations, journal critiques and field experiences. Prerequisite: ECE 110 or 115, limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 230. Creative Arts.** This course will begin with a definition of creativity as it applies to young children in the early childhood classroom. Specific attention will be given to clarifying the importance of art, music and drama in child development and learning. Delivery approach will include, but not be limited to, authentic classroom video viewing, field observations, group presentations, and research articles. Prerequisite: ECE 110 or 115, limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 240. Literacy and Literature I.** A course that addresses the growth and development of the young reader in the emergent and early beginning stages of literacy development. The course foundation is supported by both a balanced approach to literacy and Pennsylvania Academic Standards for Foundational Skills, Reading Informational Text, Reading Literature, Writing, and Speaking and Listening. Recognizing the importance of early instruction and intervention, students will explore a variety of strategies, methods, and assessment tools to meet the needs of learners, including students with special needs, struggling readers, and English language learners. Special attention in the course is given to the following topics: oral language development, phonemic awareness, phonics, and the essential role of quality children's literature. PDE Stages 1&2 field competencies are assessed in this embedded course. Prerequisite: ECE 110 or 115, limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 299. Sophomore Seminar.** Sophomore Seminar - This course is designed to continue discussion on topics related to fieldwork, evaluations, and lesson planning. Additional topics include teacher candidacy, resume writing, educational technology, professional dispositions, and academic advising. This will be a satisfactory/unsatisfactory course for all students. Graded pass/fail. This course may be repeated for credit as topic changes. 0 credits.

**ECE 310. Math Methods.** This course will begin with a historical overview of mathematics teaching and learning for young children. Current ideas on teaching mathematics will be introduced, as well as the many ways to incorporate mathematics learning into everyday classroom life. Assessments that encompass both understanding and procedural skills will be introduced. Curricular expectations related to number and operations, geometry, measurement, algebra, and data analysis and probability will be explored. Delivery approach will include but not be limited to inquiry-based instruction, journal critiques and children's literature with mathematical themes, subplots and references. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 320. Program Design and Curriculum Development.** This course provides a comprehensive, balanced overview of curriculum development in early childhood education. Standards, curriculum mapping, and the future of curriculum will be discussed as students understand what curriculum is and the role they play as teachers in curriculum development. The delivery approach will include, but not be limited to, guest speakers, text analysis, book study, technology experiences, and field experiences. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 330.Literacy and Literature II.** A course that focuses on the growth and development of the beginning reader. The course foundation is supported by both a balanced approach to literacy and the PDE Academic Standards for Foundational Skills, Reading Informational Text, Reading Literature, Writing, and Speaking and Listening. Emphasizing a strong foundation in phonemic awareness, phonics, spelling, fluency, vocabulary, and comprehension, students will explore a variety of methods, strategies, and assessments for the teaching of reading as supported by the current research. Special emphasis will be placed on making appropriate accommodations and adaptations for students with disabilities as well as struggling readers and English language learners. PDE Stage 3 field experience competencies are assessed in this embedded course. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 335. Literacy and Literature III.** A course that addresses the continued development and growth of the fluent reader and writer. The course foundation is supported by both a balanced approach to literacy and the PDE Academic Standards for Foundational Skills, Reading Informational Text, Reading Literature, Writing, and Speaking and Listening. Stressing the importance of comprehension, students will explore a variety of classroom approaches to teach reading and writing across the content areas as supported by research. Emphasis will be placed on making appropriate accommodations and adaptations for students with disabilities as well as struggling readers and English language learners. Special attention is placed on the development of thematic units and multi-genre writing. Fulfills general education requirement: Writing Process. PDE Stage 3 field experience competencies are assessed in this embedded course. Prerequisite: ECE 110, 240, 330; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 340.Teacher Researcher.** This course is designed to provide pre-service teachers an opportunity to learn about and practice the implementation of teacher research in a classroom-based setting. Students will learn how to identify an area of focus, formulate a research question, conduct a literature review, design a research study, determine methods of data collection, collect and analyze data, and report research findings. Students will be required to write a 3000-word paper detailing the teacher research project. Writing will be taught as a process. The instructor will offer instruction in writing and will provide substantive written and oral feedback on students' written performance during the writing process. Individual writing conferences are held with each student during the drafting and revision stages of the writing process. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 350.Child Wellness.** Early childhood professionals are instrumental in developing the foundations for wellness for young children and their families. This course will address current societal pressures that provide new challenges to teachers of young children. These many issues present new opportunities for teachers to appreciate the interrelationships among nutrition, health, and safety. Delivery approach will include, but not be limited to, field observations, group presentations, field trips, and lecture. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 360.Social Studies Methods.** This course is designed to introduce the complexity of social studies and draws on years of related research that demonstrates the importance of inquiry learning to deepen children's understanding of the integrated curriculum. The areas of child development related to the social studies, the current national standards and practical ideas for teaching will also be examined. Delivery approach will include, but not be limited to, inquiry-oriented instruction, class discussions, demonstrations of early concrete learning experiences and hands-on experience with various social studies programs. Prerequisite: ECE 110 or 115; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 370.Play and Projects.** This course is about children's play and development beginning with a history of ideas, beliefs, and activities of play, the early and contemporary theories of play and how scholars explain its meaning, functions, and developmental benefits. Students will gain an understanding of the developmental advantages of children's free play and the disadvantages of not playing. Delivery approach will include, but not be limited to, lecture, individual and group presentations, fieldwork observations and journaling. Prerequisite: ECE 110; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 380.Science Methods.** This course is designed to introduce the major areas of science instruction and define the relative importance of science content, processes, skills and attitudes needed for young children to successfully understand science. National Science Education Standards will be examined to identify what children at different ages and stages should know and be able to do in the area of science. Delivery approach will include, but not be limited to: inquiry-oriented instruction, class discussions, integrated unit plans and hands-on experience with various science programs. Prerequisite: ECE 110; limited to early childhood education majors or permission of the instructor. 3 credits.

**ECE 385. Advocacy, Leadership, and Collaboration.** This course will begin with an examination of the professional and ethical standards expected of an early childhood educator. Collaboration with families, the community, and public agencies will be practiced and further developed through co-teaching opportunities. Delivery approach will include, but not be limited to, field experiences, class discussions, simulations and reflective writings. 3 credits.

**ECE 405. Integrative Educational Research.** This course is designed to provide preservice teachers an opportunity to demonstrate their integration competency learned through ConstellationLVC courses and education courses in the major via a written paper and/or interdisciplinary research project. The overall project will require students to demonstrate problem solving and critical reading skills around a topic/issue/concern/interest related to teaching and/or education. Students will be asked to interrogate this topic/issue/concern/interest from an interdisciplinary perspective. Students will be required to present, defend, and reflect on the project to faculty and/or peers and/or cooperating teachers and select school personnel. Pre or co-requisite: The Connective Experience (COE) and, in particular, the integrative component of the COE must be taken prior to or concurrently with this course. Prerequisite: ECE 340 and ECE 440 or ECE 441/SPE 441. This course is for ECE and ECE/SPE majors only. 3 credits.

**ECE 410.Senior Capstone.** Special topics related to current concerns in education are researched and presented by the students in the course. Issues related to teaching and to further professional growth are explored. Students will receive extensive interview preparation, certification preparation (TIMMS) and prepare senior job portfolios. Prerequisite: Limited to spring semester senior early childhood education majors or permission of instructor. 3 credits.

**ECE 440.ECE Student Teaching.** Each student spends an entire semester in an area school under the supervision of a carefully selected cooperating teacher. Open to seniors or students who are seeking certification only. Fulfills requirement: Immersive Experience. Prerequisites:

Completion of all Early Childhood courses in the major, cumulative GPA at or above the minimum GPA specified by PDE for the PreK-4 Early Childhood certificate, completion of all Chapter 354 and Act 49-2 course requirements. 12 credits.

**ECE 441.ECE Dual Major Student Teaching.** Each ECE/SPE dual major will spend eight weeks in an early childhood education environment in an area school under the supervision of a carefully selected cooperating teacher. Open to seniors or students who are seeking certification only. Fulfills requirement: Immersive Experience. Prerequisites: Completion of all courses in the ECE/Special Education Dual Major, cumulative GPA at or above the minimum GPA specified by PDE for the PreK-4 Early Childhood Education certificate, completion of all Chapter 354 and Act 49-2 course requirements. 6 credits.

**ECN 099. Essentials of Microeconomics - Academic Leveling Course.** This course offers an alternative to ECN 101 only for students pursuing a Secondary Teaching certification in Social Studies or Citizenship education. Students may take ECN 101 and 102, or ECN 099 and 102 to fulfill the PDE requirement for economics. The course examines how individuals and firms decide how much to produce and in some cases what price to charge for their goods. Together these choices determine what is produced, how it is produced, and for whom it is produced in our economic system. Graded pass/fail. 0 credits.

**ECN 101.Principles of Microeconomics.** The course examines how individuals and firms make choices within the institution of free-market capitalism. Individuals decide how much of their time to spend working and what to buy with the earnings of their labor. Firms decide how much to produce and in some cases what price to charge for their goods. Together these choices determine what is produced, how it is produced, and for whom it is produced in our economic system. Fulfills requirement: Quantitative Reasoning. 3 credits.

**ECN 102.Principles of Macroeconomics.** This course extends the study of consumer and producer choices to discover how they affect the nation's economy. Macroeconomics deals with the economy as a whole as measured by the key variables of inflation, unemployment, and economic growth. Emphasis is on both Keynesian and classical theories and how they predict what monetary and fiscal policies can be used to affect these variables and reach national economic goals. Fulfills requirement: Quantitative Reasoning. 3 credits.

**ECN 201.Intermediate Microeconomic Analysis.** This course covers the major theories of mainstream neoclassical economics. There is intensive study of the models of consumer and firm behavior that permit understanding of how the prices and quantities of goods and services are determined in a free market capitalistic system. The implications for social welfare, and equity and efficiency issues that are inherent in the free-market system are emphasized. Prerequisite: ECN 101, 102 and MAS 111 or 161, or by permission of the instructor. Economics majors need a cumulative GPA of 2.00 in all foundation courses completed to date. 3 credits.

**ECN 202.Intermediate Macroeconomic Analysis.** In this course, students develop a model of the macroeconomy, which permits them to analyze the nature of the business cycle. The assumptions built into the model can be altered, rendering it capable of examining the macroeconomy from various theoretical viewpoints. In addition to unemployment, inflation and economic growth, the course covers real business cycles, the macroeconomic implications of free trade and emphasizes the microeconomic foundations of macroeconomics. Prerequisite: ECN 101 and 102.Economics majors need a cumulative GPA of 2.00 in all foundation courses completed to date. 3 credits.

**ECN 230.Benefit Cost Analysis.** Benefit-Cost analysis (BCA) is the study of competing public policy alternatives. The purpose of benefit-cost analysis is to inform social decision-making and facilitate the equitable and efficient allocation of society's resources. This course introduces the basic theory and principles of benefit-cost analysis and examines its implementation and effectiveness. Prerequisite: ECN 101 and 102.3 credits.

**ECN 240.Sports Economics.** This course focuses on the application of economic theories to sports and the sports industry and understanding the behavior of economic agents in sports. Students who complete the courses will gain a basic awareness of the broader financial and economic environment in which the sport industry operates, an understanding of the key economic issues in sports, an understanding of how sports provide economists with a "laboratory" to test economic theories, a general understanding of the research literature in sports economics, insight into economics, the ability to apply economic models to explain observed behavior in sports and the know-how to work with empirical economic evidence generated from sports-related data. Prerequisite: ECN 101 and 201, or permission of the instructor. 3 credits.

**ECN 312.Money and Banking.** The study of the nature and functions of money and credit, including the development and role of commercial and central banking, structures of the Federal Reserve System, and monetary and banking theory, policy and practice. The course considers the political nature of money and the tension between fiscal and monetary policymaking. Prerequisites: ECN 101 and 102.3 credits.

**ECN 316. Environmental Economics.** Environmental economics stresses the co-evolution of human preferences, understanding, technology and cultural organization. This approach differs from that of conventional economics and conventional ecology in the importance it attaches to environment-economy interactions. The role that our economic system plays in decisions affecting the sustainability of our ecosystems is emphasized. Prerequisites: ECN 101 and 102.3 credits.

**ECN 317. Energy and Natural Resource Economics.** This course applies economic principles to the management of natural resources with a central focus on energy and climate change. It involves the study of resource use and conservation, utilization rates of renewable and non-renewable resources, the issue of economy size and the limits to growth, the natural resource economic issues of development versus preservation, and green accounting. Prerequisites: ECN 101 and 102.3 credits.

**ECN 321.Public Finance.** This course extends the study of public economics to its application in the principles of taxation and public expenditures. Topics include the structure of the Federal Budget, the national debt and fiscal deficits, but also state and local financing and the division of responsibilities between the federal and local governments. Prerequisites: ECN 101 and 102.3 credits.

**ECN 331.International Finance.** This course extends the Keynesian Macroeconomic model to incorporate international financial flows; the determinants of the balance of payments; foreign exchange markets; exchange rate regimes; history of international economic institutions; and macroeconomic policy options. The course contains lectures, student presentations, theoretical problem solving, economic analysis of real-world events, reading, analyzing, and writing on academic and current event articles. Prerequisites: ECN 101 and 102.3 credits.

**ECN 332.International Trade.** This course introduces the theory and practice of international economic relations. It includes not only the history and purpose of trade and the traditional theory of the gains from trade, but also the more modern theory of trade with imperfect competition. The history and nature of the institutional structures of trade (World Trade Organization) are covered. Prerequisites: ECN 101 and 102.3 credits.

**ECN 333. Game Theory: Economic Applications.** Game theory studies how "rational" players should act and interact in strategic situations. In economics, players include people, firms, or countries. Game theory also helps predict and explain players' actions. Cooperative and non-cooperative games are used to measure behavior and identify ideal strategies in situations as diverse as industrial negotiations, marriage bargaining, and international environmental agreements. Prerequisite: ECN 201 or permission of the instructor. 3 credits.

**ECN 342. Behavioral Economics.** Behavioral economics is a branch of economics -- the social science concerned with developing theories whose ultimate aim is to help us better understand the world we live in. While economics studies how scarce resources are allocated given unlimited wants, behavioral economics focuses specifically on how scarce decision resources are used. Behavioral economics extends the theories of rational choice and equilibrium analysis by directly addressing real world challenges to the theory and assumptions of standard economic theory embodied in homo economicus. Prerequisite: ECN 101 and 201, or permission of the instructor. 3 credits.

**ECN 344. Health Economics.** This course provides the core microeconomic theories and concepts needed to understand health and health care issues. It describes how the markets for health and health services are different from other goods, with a particular emphasis on the role of government and market failure. In addition, it discusses the theoretical and empirical aspects of key health economics issues, including the demand for health and health services, supply side concerns, health insurance, the provision of public goods, health care policy and related topics. Prerequisite: ECN 101 and 201, or permission of the instructor. 3 credits.

**ECN 400. Internship.** Practical and professional work experience related to the student's career interests, involving both on-site and faculty supervision. Internship credit does not fulfill required electives in the major. Graded pass/fail. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: 2.75 GPA, permission of the chairperson, and completion of department's application form. Generally limited to juniors and seniors. 1-12 credits.

**ECN 405. Applied Econometrics.** In this course students apply statistical techniques to study the quantitative measurement and analysis of actual economic phenomena, describing economic relationships, and test hypothesis about economic theory and forecasting future economic events. Applications include examining violations of the classical assumptions and testing for specification errors. Prerequisites: BUS 170, MAS 170, 270, or 372; ECN 201/202 or ASC 385; or permission of the instructor. 3 credits.

**ECN 410. Senior Seminar.** This small seminar course is a reading course in support of the research interests of the professor, the student, or both. The content and structure of the course will depend on the research interests of the professor, but will always require from each student a major paper related to this area. Reading and critiquing articles from refereed economic journals and the popular press are also included. Prerequisites: ECN 201 and 202 and junior standing. 3 credits.

**EDU 105. Math for the Educator.** This course is designed to teach and review the four main content areas assessed in the PDE basic skills assessment. These areas include but are not limited to: numbers and quantity, algebra functions, geometry, and statistics and probability. Education majors will understand and make effective use of these content areas related to common core academic standards in order to have the skills to develop and implement appropriate interventions to improve student learning in the K-12 classroom. 3 credits.

**EDU 140. Educational Technology in the Modern Classroom.** An introduction to the educational technologies used in the classroom that help facilitate learning and to help us and our students become digitally aware in the 21st century. This course focuses on emphasizing a conscientious approach to technology that goes beyond current technology fads. Among the topics covered are technology basics, history - future of educational technology, communicating with students and parents, developing a personal learning network and staying current on trends and applications related to educational technology. Prerequisites: Freshman or sophomore education majors, or other certification candidates with permission of instructor. 3 credits.

**EDU 240. Language, Cultural Diversity and Academic Achievement: PreK - Grade 8.** This course is designed to provide pre-service elementary teachers with an opportunity to identify and practice a series of cognitive, linguistic, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts. This course may not be taken during the student teaching semester by music education majors. Other majors desiring to take this course while student teaching must obtain approval from the education department. Fulfills requirement: Intercultural Competence. 3 credits.

**EDU 245. Language, Cultural Diversity and Academic Achievement: Grade 7 - Grade 12.** This course is designed to allow the pre-service music, art, language, or grade 7 - grade 12 secondary teacher certification candidate to gain an understanding of the complex factors impacting the education and language acquisition of the diverse language and cultural minority groups of the United States. This course is required under Act 49-2 and may be taken by early childhood, special education, and secondary education students while student teaching. Music education students may not take this course while student teaching. Fulfills requirement: Intercultural Competence. 3 credits.

**ENG 120. Introduction to Literature.** Introduction to literary genres and the basic methodology, terminology and concepts of the study of literature. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**ENG 130. Introduction to Media in the Digital Age.** Introduction to theory and practice in the rapidly-evolving realm of digital media and its social, cultural, political, economic, and other implications. 3 credits.

**ENG 140. Introduction to World Theater.** This course is an introduction to the study of world theater arts, examining representative theater texts from around the globe and from different periods and genres, while at the same time tracing the evolution of the means - acting, stagecraft, and playwriting - by which these texts have been brought to performance from ancient times to the present. Fulfills requirement: Intercultural Competence. 3 credits.

**ENG 150. Introduction to Creative Writing.** Introduction to a variety of models and craft concepts useful in writing poetry, fiction, nonfiction, and other genres. This course provides the basis for the student's acquisition of a repertoire of techniques. Prerequisite: FYE 112 or permission of the instructor. 3 credits.

**ENG 160. Introduction to Film.** Introduction to film history and the basic methodology, terminology and concepts of the study of film. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG-112 or FYE-112, or permission of the instructor. 3 credits.

**ENG 220. Literary Theory and Its Applications.** Investigation of fundamental questions such as the definition of literature, the value of literature, and the validity of the literary canon. This course provides an introduction to a variety of critical approaches to literary interpretation, on both a theoretical and practical level. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 120 or 200-level Literature Survey. 3 credits.

**ENG 221. Survey of American Literature I.** This course offers a survey of selected major American authors from the colonial period to the end of the nineteenth century. During this period, Americans are beginning to explore the ways in which "being American" differs from "being English" (or some other nationality). They are wrestling with big topics like the role of religion, the meaning of equality (especially with regard to slavery, our treatment of Native Americans, and the status of women), and whether science can tell us everything there is to know about who we are and why we behave as we do. Particular authors will vary from year to year, but typically we will read non-fiction, fiction, and poetry. 3 credits.

**ENG 222. Survey of American Literature II.** The course is an introduction to major American authors from 1865 to the present. The survey offers an insight into how American literature shapes American identity and is in turn informed by it. We will explore the question of American identity by observing the relationship between the nation and the individual, the evolution of the artist in society, the recognition of multi-ethnic subjectivity, the relationship between urbanism and regionalism, and the diverse and innovative use of language. The course will follow different literary movements in this period from Realism, Naturalism, Modernism, the Harlem Renaissance, Post-War Poetry, and Postmodernism through poetry, short stories, plays, and novels. Our readings will be informed by historical, social, philosophical, cultural, and thematic perspectives. 3 credits.

**ENG 225. Survey of English Literature I.** This course offers a survey of selected major English works from the early Middle Ages to about 1800. The course will also pay significant attention to the evolution of the English language as evidenced within the literature read and the historical and linguistic factors contributing to that change, including the rise of book culture, literacy rates, and urban migration in England. Authors studied may vary from semester to semester, but works read will range from heroic verse composed by anonymous poets in the early part of the period to Chaucer to the speeches of Queen Elizabeth and the fantastical worlds of Margaret Cavendish to Shakespeare and the poets and essayists of the Restoration. 3 credits.

**ENG 226. Survey of English Literature II.** The course is an introduction to major English authors from 1800 to the present. Through novels, short stories, poetry, plays, and non-fiction the course engages with construction of English identity. The survey offers an insight into the evolution of English literature through an examination of the role of the artist in society against the backdrop of the rise and fall of British Empire. The course begs the question who writes English literature? 3 credits.

**ENG 227. Survey of World Literature I.** This course will investigate the relationship between the local and the global through literature from Antiquity (2nd millennium BCC) to the enlightenment Era (18th century CE). Organized around major literary forms, the course will familiarize students with different cultural, socio-political, religious, and economic movements across the globe. How do we read and understand other cultures while situated in our own and how does our reading of other cultures in form our understanding of our own culture? How does the attempt to respond to the unique cultural and political movements of the period manifest itself in literature from the period? Through religious texts, origin myths, epics, lyrics, plays, short stories, poetry, and non-fiction, the course will consider the question of how a specific localized form adapts when it crosses geographical boundaries. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**ENG 228. (Re)discovering the World in Stories: Renaissance to Enlightenment.** How do we read and understand other cultures while situated in our own and how does our reading of other cultures inform our understanding of our own culture? By examining major literary texts from the 15th century to the 19th century, the course will familiarize students with different cultural, socio-political, religious, and economic movements across the globe. How does the attempt to respond to the unique cultural and political movements of the period manifest itself in literature from the period? Through the rise of new literary forms like the novel, the short story, the dramatic monologue etc. we will examine how the literature from this period challenges and remodels the concepts of form, structure, and context. Fulfills requirement: Intercultural Competence. 3 credits.

**ENG 229. Survey of World Literature II.** This course will investigate the relationship between the local and the global through literature from the 19th century CE to the Present. Organized around major literary forms, the course will familiarize students with different cultural, socio-political, religious, and economic movements across the globe. How do we read and understand other cultures while situated in our own and how does our reading of other cultures inform our understanding of our own culture? How does the attempt to respond to the unique cultural and political movements of the period manifest itself in literature from the period? Through religious texts, origin myths, epics, lyrics, plays, short stories, poetry, and non-fiction, the course will consider the question of how a specific localized form adapts when it crosses geographical boundaries. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**ENG 230. Grammar, Usage, Language: An Introduction to the Fundamentals of English Grammar.** This course focuses on the basic parts of English sentences, and on how those parts combine to create grammatical sentences. The course also considers issues of usage as well as broader topics in linguistics. No prior study of grammar is required. 3 credits.

**ENG 231. Journalism and News Reporting.** Introduction to the basic skills of journalistic writing such as interviewing, gathering and reporting news and writing feature stories according to standard formats and styles. The course also covers ethical and legal considerations related to news reporting. Prerequisite: ENG 112 or FYE 112, or permission of the instructor. 3 credits.

**ENG 233. Multimedia Narratives.** Hands-on introduction to storytelling through a variety of mediums, including audio, video, voiceover and print. The course will focus on career exploration through writing, going from academic discourse to communicating in such fields as public relations, social media, print journalism, broadcasting and podcasting. Prerequisite: ENG 112 or FYE 112, or permission of the instructor. 3 credits.

**ENG 240. Theater Production and Performance.** Instruction in all aspects of producing and performing a full-length play. 3 credits.

**ENG 241. Introduction to Performance: Speaking And Movement.** Introduction to the development of skills in speech and movement through the use of theater games and improvisations. 3 credits.

**ENG 250. Creative Writing Form and Theory.** This process-based course emphasizes the conceptual frameworks of various literary genres and provides an introduction to rhetorical strategies, formal elements, and literary theories that illuminate the practice of writing. Prerequisite: ENG 150, or permission of instructor. 3 credits.

**ENG 251. Creative Writing Workshop in Poetry.** Craft-specific workshop in poetry. Intensive focus on the student's own writing as well as study of literary works designed to enhance familiarity with and understanding of craft concepts. Prerequisite: ENG 150 or permission of the instructor. 3 credits.

**ENG 252. Writing for Life: A Nonfiction Workshop.** In this process-based course, students will hone their writing skills through intensive focus on the student's own writing in the genre, as well as a study of nonfiction as a genre designed to enhance familiarity with and understanding of craft concepts. Students will consider multiple approaches to nonfiction writing and the essay as a form, and the course emphasizes drafting, information literacy, and revision. Fulfills requirement: Critical Thinking through Writing. Prerequisite: FYE 112 or ENG 112. 3 credits. [This course is cross-listed with ENG 352]

**ENG 253. Scriptwriting Workshop.** This course is an introduction to and study of script writing. Intensive focus on the student's own writing as well as study of literary works designed to enhance familiarity with and understanding of craft concepts specific to the writing of scripts for stage, screen, and other purposes. Prerequisite: ENG 112 or FYE 112. 3 credits. [This course is cross-listed with ENG 353]

**ENG 254. Creative Writing Workshop in Fiction.** Craft-specific workshop in fiction. Intensive focus on the student's own writing as well as study of literary works designed to enhance familiarity with and understanding of craft concepts. Prerequisite: ENG 150 or permission of the instructor. 3 credits.

**ENG 260. Film Theory and Its Applications.** Investigation of fundamental questions such as the definition of film, the value of film, and the ways in which film intersects with culture and identity. This course provides an introduction to a variety of critical approaches to film interpretation, on both a theoretical and practical level. Combining theory and practice, students will also engage in immersive experiences that allow them to attempt to apply what they learn beyond the classroom. Fulfills requirement: Critical Thinking through Writing, Immersive Experience. Prerequisite: ENG-120 or ENG-160, or the permission of the instructor. 3 credits.

**ENG 299. Professional Development for English Majors.** This course prepares students to develop skills and materials that enable completion of capstone courses and professional strategic plans. Necessary for enrollment in all English capstone courses other than Secondary Education. Graded pass/fail. Prerequisite: FYE/ENG 111 and FYE/ENG 112. Suggested for fall of sophomore or junior year. 3 credits.

**ENG 301. Acting Lab.** A workshop that meets once a week to explore specific issues in acting; course content changes every semester. May be repeated for credit. 1 credit.

**ENG 321. Poetry.** This course draws on English, American, and Commonwealth traditions in poetry from the Middle Ages to the present, introducing students to a wide range of poems, a critical vocabulary, and varied approaches to interpretation. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 120 or 200-level literature survey, or permission of instructor. 3 credits.

**ENG 322. The Novel.** This course introduces students to the novel as a literary form and explores its development in different historical and cultural contexts. Students read selected novels, discuss them, and learn to write critically about them. Readings vary semester to semester and will include non-canonical and non-western writers. Prerequisite: ENG 120 or 200-level literature survey. 3 credits.

**ENG 324. Shakespeare I.** Concentrated study of early Shakespearean drama, especially the comedies and the histories. Writing process. Prerequisite: ENG 120 or 200-level Literature Survey. 3 credits.

**ENG 325. Shakespeare II.** Concentrated study of late Shakespearean drama, especially the tragedies and the romances. Prerequisite: ENG 120 or 200-level literature survey. 3 credits.

**ENG 326. Major Poets.** This course will engage students in close and extensive readings of the work of selected major British or American poets. Students will develop their skills as readers and interpreters of poetry and literary criticism. The particular poets studied will vary from semester to semester. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 120 or 200-level literature survey. 3 credits.

**ENG 330. Advanced Journalistic Writing.** This course builds on the basic skills of journalistic writing, interviewing, and fact gathering of Eng. 213 Journalism: News Reporting. Advanced Journalistic Writing involves the writing of more complex and long form journalism that requires gathering and assimilating a greater range of information, asking more penetrating questions, comprehending and explaining more sophisticated and multi-faceted subjects, and/or first-person participation. The course will adhere to the standard deadline demands of print publications. Stories produced in the class will contribute to the content of the College's student-run newspaper, La Vie Collegienne. Prerequisite: ENG 231 (formerly 213) or DCOM 285, or permission of the instructor 3 credits.

**ENG 331. Persuasive Writing.** Investigation of the theory and practice of advanced composition and rhetoric in multiple communications contexts. This course introduces the student to classical and contemporary rhetoric, and contributes to the enhancement of persuasive writing skills. Fulfills requirement: Critical Thinking through Writing. Prerequisite: ENG 112 or FYE 112; or permission of the instructor. 3 credits.

**ENG 335. Editing.** Introduction to the theory and practice of editing, with an emphasis on reading closely, revising, creating headlines, and other aspects of refining and preparing copy for publication or online distribution. Prerequisite: ENG 231 (formerly 213), or permission of the instructor. 3 credits.

**ENG 341. Reading•Performing Between the Lines.** Exploration of the relationship between the actor and the text through script analysis and the performance of scenes and monologues. 3 credits.

**ENG 351. Intermediate Creative Writing Poetry Workshop.** Intermediate workshop in poetry. Intensive focus on the student's own writing as well as study of literary works designed to enhance understanding and mastery of craft concepts. Students in ENG 351 will lead workshops and will produce a chapbook of polished work at the semester's conclusion. Prerequisite: ENG 251, or permission of the instructor. 3 credits.

**ENG 352. Intermediate Nonfiction Workshop.** Intermediate workshop creative nonfiction. Intensive focus on the student's own writing as well as study of literary works designed to enhance understanding and mastery of craft concepts. Students in ENG 352 will lead workshops and will produce a significant body of polished work at the semester's conclusion. Prerequisite: ENG 252. 3 credits. [This course is cross-listed with ENG 252]

**ENG 353. Intermediate Scriptwriting Workshop.** Intermediate workshop in scriptwriting. Intensive focus on the student's own writing as well as study of literary works designed to enhance understanding and mastery of craft concepts. Students in ENG 353 will lead workshops and will produce a significant body of polished work at the semester's conclusion. Prerequisite: ENG 253. 3 credits. [This course is cross-listed with ENG 253]

**ENG 354. Intermediate Creative Writing Workshop in Fiction.** Intermediate workshop in fiction. Intensive focus on the student's own writing as well as study of literary works designed to enhance understanding and mastery of craft concepts. Students in ENG 354 will lead workshops and will produce a chapbook of polished work at the semester's conclusion. Prerequisite: ENG 254; or permission of the instructor. 3 credits.

**ENG 360.Global Film.** Introduction to analysis and critique of a broad range of foreign and US films and an overview of film's history as a form of political, social, and cultural expression. This course contributes to the student's acquisition of a critical vocabulary and development of critical thinking skills. It also provides opportunities for creative/hands-on work. Fulfills requirement: Intercultural Competence. Prerequisite: ENG 120, 160, a 200-level or higher survey or film course, or permission of the instructor. 3 credits.

**ENG 390.Special Topics.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisites vary. 3 credits.

**ENG 391.Special Topics in Communications.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**ENG 392.Special Topics in Literature.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: ENG 112 or FYE 112, or at least one English Literature Survey (ENG 221-229); or by permission of the instructor. 3 credits.

**ENG 393. Special Topics in Writing.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisites vary. 3 credits.

**ENG 400.Internship.** Practical and professional work experience, on-or-off campus, related to the student's career interests, involving both on-site and faculty supervision, and generally limited to juniors and seniors. Graded pass/fail. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: ENG 299 and permission of the chairperson; application form from Registrar's Office must be completed at the time of registration. Generally limited to juniors and seniors. 1-3 credits.

**ENG 420.African-American Literature.** Examination of African-American literature as a lens through which students may more clearly view the ways that African Americans have contributed to, been influenced by, appropriated and transformed notions of American identity, specifically conceptions of freedom, equality, gender, sexuality, religion, class, and literature. Fulfills requirement: Intercultural Competence. Prerequisite: ENG 120 or 200-level literature survey. 3 credits.

**ENG 421.Literature by Women.** Investigation of the ways in which women from a broad diversity of cultural backgrounds respond to and reshape a tradition that has typically been gendered as masculine. This course explores the effects of culture, ethnicity, class, sexuality, and religion on women's writing. Fulfills requirement: Intercultural Competence. Prerequisite: ENG 120 or 200-level literature survey. 3 credits.

**ENG 422.The Empire Writes Back: Post-Colonial Literature.** The class will explore the conflicts created in post-colonial nation states after the collapse of colonization, the effects of neo-colonialism, and the "civilizing mission" directed at indigenous populations. Our understanding of these texts will be aided by reading extracts from seminal works of postcolonial theory. Where possible, each module will be supplemented by poetry, short films, music videos etc. to develop a nuanced understanding of what constitutes postcolonial literature and the role it plays in helping us engage more fully with the world beyond the classroom. Fulfills requirement: Intercultural Competence. 3 credits.

**ENG 423. The Literature of Native America.** This course considers the ways in which literature written by and/or about Native Americans reflects indigenous cultural histories and values, as well as the ways in which that literature reflects the differences between Native American and European literary forms. In addition to studying literature, we will study the historical, political, and cultural background of that literature, as well as the critical commentary that surrounds it. Fulfills requirement: Intercultural Competence. Prerequisite: ENG 120 or 200-level literature survey, or permission of the instructor. 3 credits.

**ENG 430.Multimedia Feature Writing.** Introduction to the fundamentals of feature writing, with an emphasis on specific kinds of research, interviewing, storytelling, and editing text for diverse media. The course is run as a writing workshop. Prerequisite: ENG 231 (formerly 213) or ENG 233 (formerly 217), or permission of instructor. 3 credits.

**ENG 431.La Vie Collegienne Newspaper Editor.** Students in this course have been identified as editors for the student-run newspaper. An editor is responsible for the overall production of the newspaper. This includes determining the layout of the paper, determining the pictures to accompany the articles, contributing to the writing of articles, copy-editing student written articles and meeting all the deadlines. In addition, editors of La Vie oversee the website for the newspaper, determining story placement and copy editing. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: ENG 231 and 330.3 credits. [This course is cross-listed with ENG 231 ENG 330]

**ENG 450.Creative Writing Chapbook.** Students in ENG 450 will compile and revise their best creative work, in consultation with the ENG 450 instructor, to create a cohesive chapbook. The chapbook will also contain a reflective preface that puts the writer's work in contact with their educational journey and creative influences. Prerequisites: Take ENG 150, 250 and 251.0 credits.

**ENG 451.Advanced Creative Writing.** A blended craft and theory course for students that culminates in a collection of the student's best completed and polished creative work, as well as a substantial exploratory and analytical essay on craft and aesthetics. This course also includes study in the philosophical and aesthetic theories that shape approaches to creative writing. Prerequisite: Take ENG-250, or permission of the instructor. 3 credits.

**ENG 499. Critical/Making: Independent Integrative Research.** This course helps students to develop an independent studies project specific to their individual areas of creative + professional interest and see that project through to completion. Students will receive training in strategies for generating original and compelling ideas, advanced interdisciplinary research methods and information literacy skills, and processes for

production, revision, and finalization. Meaningful completion of Portfolio Review and Intellectual Autobiography will be part of this process. Prerequisite: COE sequence. 3 credits. [This course is cross-listed with ITG 487]

**ENVI 101. Introduction to Environmental Science.** The course will be an exploration of human interactions with other organisms and the environment including an introduction to ecological principles and their applications to understanding the causes and current status of environmental problems. Students will be presented with the major issues related to the environment and provided with tools for critical thinking regarding these issues in order to become more aware of the scientific, political, economic, ethical, and social issues surrounding the effects of human activities on the natural world. Discussion topics include sustainability, climate change, biodiversity and its conservation, energy sources, pollution, environmental health, resource management, and waste disposal. Corequisite: ENVI 101L. 4 credits.

**ENVI 130. Introduction to Geosystems.** This course will investigate the physical geography of Earth's dynamic systems, including its energy, air, water, weather, climate, landforms, and soils. Students will learn how humans impact these systems, and learn how these systems influence human life. 3 credits.

**ENVI 131. Geographic Information Systems.** Location on the earth is an important part of our understanding and communication about everything from disease outbreak, to political unrest, to famine, to climate change, to urban planning, and marketing trends. A Geographic Information System (GIS) helps us visualize, question, analyze and interpret data, and to understand relationships, patterns, and trends. This course is designed to give students a hands-on introduction to methods and uses of GIS, and to a geospatial way of looking at the world. 3 credits.

**ENVI 190. Special Topics in Environmental Science.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**ENVI 290. Special Topics in Environmental Science.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**ENVI 291. Special Topics in Socio-Environmental Science.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**ENVI 391. Special Topics in Socio-Environmental Science.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**ENVI 400. Internship.** Internship Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**ENVI 500. Independent Study.** Independent Study in Environmental Science. This course may be repeated for credit as topic changes. 1-3 credits.

**ENVI 550. Advanced Research.** Advanced Research in Environmental Science. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-3 credits.

**EXSC 101. Anatomy & Physiology I.** A detailed study of the human organism according to levels of chemical and structural organization with special reference to cytology, histology, and organs of the integumentary, skeletal, muscular, and nervous systems and fluid and electrolyte balance. Corequisite: EXSC-101L. 4 credits.

**EXSC 102. Anatomy & Physiology II.** A detailed study of the human organism according to levels of chemical and structural organization with special reference to cytology, histology, and organs of the sense organs, endocrine, cardiovascular, respiratory, urinary, digestive and reproductive systems and genetics. Prerequisite: EXSC 101.4 credits.

**EXSC 105. Care and Prevention of Athletic Injuries.** This course includes units dealing with the history of athletic training, basic anatomy of common injuries, evaluation techniques, preventative measures to reduce the incidences of injuries and a knowledge of basic treatment procedures to be used after injuries occur. 3 credits.

**EXSC 120. Medical Terminology.** Examines terminology used by health care providers in clinical health care delivery, exploring medical word structure; terminology applicable to all body systems and medical abbreviations. Graded pass/fail. 1 credit.

**EXSC 123. Scientific Basis of Coaching.** Coaching theory and methodologies are reviewed relative to specific sport teams and the relationship to team development. Students will develop a coaching philosophy and apply such to exercise and sport case studies. Recommended prerequisite: PSY 110.3 credits.

**EXSC 148. Health Psychology.** This course will provide an overview of the relationship between psychological factors and health status. Evidence-based theories and models related to psychology of health will provide the framework for this course. Topics will include adherence, behavior and personality, stress/coping, and psychological factors that impact engagement in the healthcare system. Prerequisite: PSY-110.3 credits. [This course is cross-listed with PSY 148]

**EXSC 202. Training and Conditioning.** This course is designed to provide EXSC students with the knowledge, skills, and abilities required of a strength and conditioning professional and to prepare them for the Certified Strength and Conditioning Specialist (CSCS) exam. Successful completion of the National Certification Examination, will facilitate recognition as a unique professional in both the Fitness Industry and Sports Science Programs. The theoretical component of the course will further advance the student's knowledge on biomechanics, bioenergetics, adaptations to training, as well as program design and periodization. The practical component of the course mimics responsibilities of a Strength and Conditioning professional. Prerequisite: EXSC 211, or permission of the department chairperson. Pre- or Co-requisite: EXSC-216/L. 3 credits.

**EXSC 211. Introduction to Human Movement.** This Course is designed to introduce principles, terminology, and function of the human body. Specific topics will include joint movements, muscle action, and basic function associated with the neuromuscular system. Laboratory experiences will allow the student to visualize and demonstrate movement patterns associated with basic functional movement. Prerequisite: BIO 111 or EXSC 102, or permission of the instructor. Corequisite: EXSC 211L. 4 credits.

**EXSC 216. Human Physiology.** The design of this course is intended to impart an understanding of the basic concepts of human physiology with emphasis on neuromuscular, cardiovascular, respiratory and endocrine physiology. Laboratory exercises place emphasis on effective

experimental designs and data analysis in the study of physiological mechanisms. Lab exercises cover such topics as muscle contraction measurements, spirometry, and ECG analysis. Fulfills requirement: Critical Thinking through Writing. Prerequisite: EXSC 102/L or BIO 111/L, and CHM 111/113 or CHM 105/106, or by permission of the department chairperson. Corequisite: EXSC 216L. 4 credits.

**EXSC 221. Fitness Theory.** This course is designed to provide students with an overview of the educational concepts, performance techniques, program design, music knowledge and leadership skills needed to teach instructor-led exercise programs. The course will include basic analysis and application of safe and effective exercise procedures for all fitness levels. 3 credits.

**EXSC 302. Healthcare Administration Law and Policy.** This course introduces students to a broad range of health care legal and policy issues surrounding the provision of health care. The course will provide an overview and developmental summary of the American health care system and its driving forces; examine the formulation, implementation of health care policy. Legal issues will focus on rights of patients in their relationships with health care professionals and institutions, and laws and obligations that pertain to healthcare professionals. 3 credits.

**EXSC 305. Seminar in Sport and Health Science.** Students will explore professional and trade literature in the areas of exercise, sport, and health promotion. Emphasis will be on the process of identifying credible and current sources of professional and trade literature and appraising the current literature to provide clients with appropriate guidance in the fields of exercise, sport, and health promotion. This course may be repeated for credit as topic changes. Prerequisite: EXSC 315 and MAS 170.3 credits.

**EXSC 310. Exercise Physiology.** Examines skeletal muscle structure and function and cardiovascular, respiratory, and neuro musculoskeletal physiology during exercise in general and special patient/client populations. Current methods of nutritional and physical assessment will be evaluated. Prerequisite: EXSC-216/L or BIO-222, or permission of the department chairperson. 3 credits.

**EXSC 311. Fundamentals of Anatomy.** This course is designed to introduce students to the fundamentals of human anatomy. Covering human muscle origins, insertions, and actions as well as the anatomy of the skeletal, circulatory, respiratory, and nervous systems. Traditional lecture format and a weekly laboratory session using anatomical models will serve as the teaching method. Prerequisite: EXSC 102 or BIO 111, or permission of the instructor. Corequisite: EXSC 311L. 4 credits.

**EXSC 312. Psychosocial Aspects of Disease and Disability.** A survey course of the psychosocial implications of illness and disability. Specific attention is given to cultural differences, adjustment models, family stress from caregiving, family violence, and normal grieving processes. 3 credits.

**EXSC 314. Physical (in)activity in Health and Disease.** Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths annually. This is a course designed to provide students with a basic understanding of the role of physical (in)activity in health and disease. The objectives of this course are to provide students with: a fundamental understanding of the physiological principles, as it relates to physical (in)activity in those with and without disease; an appreciation of specific environmental/cultural frameworks on physiologic responses to inactivity; an understanding acute and chronic activity/exercise in both health and disease; recognizing the therapeutic potential of regular physical activity for persons with disease; the rationale to generate an appropriate exercise prescription recognizing environmental/cultural frameworks; and an opportunity to improve their presentation and scientific writing skills. Fulfills requirement: Intercultural Competence. Prerequisite: EXSC 310, or permission of the department chairperson. 3 credits.

**EXSC 315. Principles of Human and Exercise Physiology.** The course is designed to provide EXSC students with an overview of exercise physiology to improve their physiological understanding of how the body responds to exercise. Students will be able to identify behaviors, choices, and environments that impact health and training. Prerequisite: EXSC 101 and 102; and CHM 105/106. Corequisite: EXSC 315L. 4 credits.

**EXSC 316. Exercise Testing and Prescription.** The purpose of this course is to provide students in EXSC: 1.theoretical understanding of the principles of exercise testing and prescription, 2.an opportunity to engage in basic fitness profiling and exercise prescription aimed to improve fitness and health outcomes; 3 an opportunity to develop skills required to administer health/fitness assessments; and 4 to further develop problem solving, decision-making, and communication skills. Fulfills requirement: Critical Thinking through Writing. Prerequisite: EXSC 211 and 310; or permission of the department chairperson. Corequisite: EXSC 316L. 4 credits.

**EXSC 319. Biomechanics.** The purpose of this course is to provide students with the basic and necessary knowledge to undertake a systematic approach to the analysis of human movement. The student will investigate mechanical and anatomical analysis of movement in relation to human performance. Prerequisite: EXSC-211 and PHY-103, or permission of the department chairperson. 3 credits.

**EXSC 376. Exercise Science and Performance Testing.** Students will conduct various exercise, anthropometric and body composition, and human performance assessments with community clients, interpret and educate the client of the results of the respective assessment and participate in the analysis and client recommendations as appropriate. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisites: EXSC 202, 310, 319. Pre or co-requisite: EXSC 316. Signature of EXSC 316 instructor required. 0 credits.

**EXSC 404. Advanced Theories in Training and Conditioning.** The course is designed to provide EXSC students with knowledge of advanced strength training and conditioning theory and practice. The course explores advanced areas of resistance training, metabolic training, flexibility, reaction time, speed, and agility. The course will also investigate alternative methods and practices used in the fitness and strength and conditioning industry to provide the student with a variety of skills and techniques to be used in the field. Prerequisite: EXSC 202 and 315. 3 credits.

**EXSC 420. Lifespan Health Promotion Eating Disorders.** Students will explore the concept of health across the lifespan. Emphasis will be placed on the understanding of health, its impact on individuals and the community and the development of health promotion programs unique to ages ranging from young children to the older adult. Prerequisite: EXSC-314. 3 credits.

**EXSC 430. Nutritional Aspects of Exercise and Eating Disorders.** This course is designed to educate exercise science majors on the basics of exercise nutrition, as well as the impacts that body image can have on eating habits. Students will explore details of macronutrients, micronutrients and proper hydration. They will correctly identify nutritional needs of persons undertaking a variety of levels of physical exertion, and be proficient in educating their patients of those needs. Students will understand disordered eating patterns, their physiological and

psychological impacts, and will be able to identify obvious and subtle signs of disordered eating patterns. Prerequisite: EXSC-314, or permission of the department chairperson. 3 credits.

**EXSC 432. Certified Strength and Conditioning Specialist Prep (CSCS).** The course is designed to provide EXSC students with the knowledge, skills, and abilities required of a strength and conditioning professional and to prepare them for the Certified Strength and Conditioning Specialist (CSCS) exam given by the National Strength and Conditioning Association (NSCA). Prerequisite: EXSC 202. Corequisite: EXSC 404. 2 credits.

**EXSC 434. ACSM Certified Exercise Physiologist Preparation.** The American College of Sports Medicine Certified Clinical Exercise Physiologist (ACSM) works with patients and clients challenged with cardiovascular, pulmonary, and metabolic diseases and disorders, as well as with apparently healthy populations in cooperation with other healthcare professionals. This course is designed to ensure students interested in applying concepts in exercise physiology and pathophysiology to the health/fitness industry are familiar with the knowledge and skills necessary to qualify for certification offered through the ACSM. Such certifications provide evidence of a level of knowledge recognized across health-related fields, giving students instant credibility and respect among health professionals. Prerequisite: EXSC 310 and 316. 3 credits.

**EXSC 442. Pharmacology.** This course is an introduction to the general concepts and principles of pharmacology as it relates to the discipline of exercise science. Pharmacokinetics and pharmacodynamics principles will be addressed. The practical knowledge of Pharmacology including indications, contraindications, precautions, dose information, allergies, drug interactions and adverse side effects of prescription and non-prescription drugs as they relate to injuries or illnesses commonly acquired by the physically active person will be presented. Performance-enhancing substances (ergogenic aids) and an introduction to the process of drug testing in sports will also be a significant portion of the course. Prerequisite: EXSC-314 or permission of the department chairperson. 3 credits.

**EXSC 452. Research Methods I.** The evidence-based coursework relates to the role of clinical research in exercise and athletic training professions. This course includes conceptual and computational applications associated with the common statistical techniques relevant to the exercise or sports medicine clinicians. The intent is to provide students with an introduction to frequently used descriptive and inferential statistical methods for clinical or research purposes in exercise or sports medicine. Prerequisite: MAS-170 or MAS-270, or permission of the department chairperson. 2 credits. [This course is cross-listed with ATR 652]

**EXSC 460. Practicum I.** Full-time supervised learning experience spanning one, sixteen-week period aimed to emphasize the diversity of career options available with an exercise science degree. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisite: Successful completion of all EXSC courses or permission of the department chairperson. Required major GPA of 2.0 or greater prior to Practicum placement. 12 credits.

**EXSC 461. Practicum II.** Full-time supervised learning experience spanning one, eight-week period aimed to emphasize the diversity of career options available with an exercise science degree. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisite: Successful completion of all EXSC courses or permission of the department chairperson. Required major GPA of 2.0 or greater prior to Practicum placement. 6 credits.

**EXSC 462. Practicum III.** Full-time supervised learning experience spanning one, eight-week period aimed to emphasize the diversity of career options available with an exercise science degree. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisite: Successful completion of all EXSC courses or permission of the department chairperson. Required major GPA of 2.0 or greater prior to Practicum placement. 6 credits.

**FIN 283. Financial Instruments.** This course provides an introduction to many modern financial instruments such as bonds and other fixed income products, stocks, mutual funds, ETFs, and securitization products. We will discuss how these instruments are used to create portfolios that balance the risk and return needs of particular investors. Throughout the course, we will use Excel to create computational models for the topics being considered. Prerequisite: MAS 112 or MAS 162. 3 credits.

**FIN 381. Corporate Finance.** The course covers the core concepts of corporate finance including: financial instruments, sources of capital and their costs, dividend policy, capital structure, capital budgeting, financial performance assessment, stock valuation, portfolio theory, behavioral finance, and arbitrage. FIN 381 combined with ASC 386 covers the material on SOA exam IFM - Investments and Financial Markets. Prerequisite: ASC or FIN 385, or permission of the instructor. 3 credits.

**FIN 382. Financial Modeling.** Students will study a variety of financial models including underlying theory and computer implementation. Topics include stationary, autoregressive, moving average, mixed, and ARIMA models. Additional topics such as statistical model testing, volatility models, or portfolio optimization may be included based on time constraints and student interest. Prerequisite: ASC 385, MAS 371; and FIN 283 or ASC 386. 3 credits.

**FIN 385. Mathematics of Finance.** This course is an introduction to interest theory (including applications) and fundamental financial instruments. Interest theory topics covered include time value of money, annuities, loans, bonds, project appraisal, portfolios, duration, immunization, swaps, and the term structure of interest rates. These ideas are then applied to study various financing and budgeting methods for corporations. ASC 385 covers the material on SOA exam FM - Financial Mathematics and is designed to meet the SOA standards for Validation through Educational Experience (VEE) in the area of corporate finance. Prerequisite: MAS 112 or MAS 162. 3 credits. [This course is cross-listed with ASC 385]

**FIN 386. Financial Derivatives and Pricing.** In this class, we study financial models and their applications to risk management. The financial instruments section of the class focuses on the properties and uses of derivative products including calls, puts, forwards, and futures. Topics we address include parity, binomial pricing, the Black-Scholes model, hedging, exchange rates, and exotic options. The last part of the course looks at topics related to insurance and rate-making. ASC 386 combined with FIN 381 covers the material on SOA exam IFM - Investments and Financial Markets. Prerequisite: ASC 385 or FIN 385. 3 credits. [This course is cross-listed with ASC 386]

**FIN 400. Internship.** Practical and professional work experience related to the student's career interests, involving both on-site and faculty supervision. Internship credit does not fulfill required electives in the major. Graded pass/fail. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: Generally limited to juniors and seniors. 1-12 credits.

**FRN 101.Elementary French I.** Develop basic communicative proficiency in French and French-speaking cultures. Fulfills requirement: Language and Culture. \*Note: This course does not satisfy LAC, Formative, or any Constellation requirement for students enrolled prior to Fall 2019. 3 credits.

**FRN 102.Language and Culture in the French Speaking World - Elementary Level.** This is an active and immersive language and culture course, taught almost entirely in French in which students will develop elementary-level skills in listening, speaking, reading and writing in French and cultural awareness of the cultures associated with French. Fulfills requirement: Language and Culture. Prerequisite: FRN 101 or placement test. 3 credits.

**FRN 201.Language and Culture in the French- Speaking World - Intermediate Level I.** This is an active and immersive language and culture course, taught almost entirely in French in which students will develop intermediate-level skills in listening, speaking, reading and writing in French and cultural awareness of the cultures associated with French. Fulfills requirement: Language and Culture. Prerequisite: FRN 102 or placement test. 3 credits.

**FRN 202.Language and Culture in the French- Speaking World - Intermediate Level II.** This is an active and immersive language and culture course, taught almost entirely in French in which students develop higher intermediate-level skills in listening, speaking, reading and writing in French, awareness of the cultures associated with French, and intercultural competence. Fulfills requirement: Language and Culture. Prerequisite: FRN 201 or placement test. 3 credits.

**FRN 300.Advanced Applied French.** This is an active and immersive language and culture course, taught entirely in French in which students develop their communicative and intercultural proficiencies and apply these to their chosen major discipline by completing individualized, project-based course work at the advanced French level. This course may be repeated for credit as topic changes. Fulfills requirement: Language and Culture. Prerequisite: FRN 202, 280, or placement test. 3 credits.

**FRN 305. Independent Summer Study in Quebec.** This three-week French language and culture course provides students possessing intermediate to advanced proficiency with an intensive linguistic and cultural immersion in an authentic Francophone environment. It combines daily classroom instruction with independent cultural activities and excursions. Language of instruction is French. Fulfills requirement: Language and Culture. Prerequisite: FRN 280 or placement test, and the permission of the instructor. 4-8 credits.

**FRN 480.Capstone Senior Seminar in French.** Culminating experience for the French major. Focus on synthesizing knowledge from previous courses into a broad historical and cultural framework. Final project will take the form of an extensive research paper. Prerequisite: At least 20 hours of French credit. 1 credit.

**FYE 111.First Year Experience I.** This is a seminar-style course that promotes intellectual inquiry and develops competencies essential to meet the rigorous curricular demands of our College. The primary focus is on writing with a secondary focus on critical reading. In addition, a companion component of the course supports students' successful emotional and intellectual transition to college by addressing strategies for time management, classroom preparation, and examination preparation. Students will also be introduced to relevant campus resources. Fulfills requirement: First Year Experience. Students must take the corresponding companion course of FYE-111C, as evident by matching section numbers. 4 credits.

**FYE 112.First Year Experience II.** This course continues FYE I's focus on writing and critical reading with an added emphasis on information literacy. Students learn library research techniques, including how to evaluate the quality and relevance of sources, and use information legally and ethically, culminating in a research paper. Fulfills requirement: First Year Experience. Prerequisite: FYE 111, or permission of the instructor. 3 credits.

**FYE 113. Introduction to the LVC Experience.** This course introduces transfer students to the LVC experience by providing them with the knowledge and resources essential to success on our campus. This course is restricted to New Transfer Students only. Fulfills requirement: First Year Experience. Restricted to transfer students who have not completed FYE 111 at LVC. 1 credit.

**GLB 101.Crossing Borders: Globalization.** This course introduces students to the multiple dimensions of international issues, events, and structures from an array of perspectives by examining cultural, social, geographic, economic and political borders. Fulfills requirement: Intercultural Competence. 3 credits.

**GLB 305. Global Studies Professional Development I.** In their junior year, Global Studies students will engage in professional development by researching careers in global studies, deftly highlighting their professional skills, experiences and interests in preparation for employment, fellowships/scholarships and/or graduate school in an international field. Prerequisite: GLB 101 and junior or senior standing. 0 credits.

**GLB 400.Internship.** Internships provide Global Studies students with opportunities to achieve academic credit internships with local and regional employers. As a high impact educational opportunity, the internship experience allows students to gain knowledge and experience, learn in a "real world" environment, explore a chosen profession and achieve academic credit for their experience. Employers often seek out talented, motivated, and skilled global studies interns as a way of supporting their organizations' project needs and finding future employees while providing undergraduates with an exceptional learning experience in their area of interest. Internship opportunities are currently available at the World Affairs Council-Harrisburg, Church World Service-Lancaster, or while studying abroad. Other internship opportunities are available. Successful completion of the internship is contingent upon the student completing a reflective paper detailing the experience. Majors are recommended to pursue an internship opportunity during their junior or senior year. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**GLB 405. Global Studies Professional Development II.** In their senior year, Global Studies students will engage in professional development by applying for positions in global studies and/or submitting applications for fellowships and scholarships and graduate school based on their professional skills, experiences and interests. Prerequisite: GLB 305. Must be taken in the senior year. 0 credits.

**GLB 460.Collaborative Undergraduate Research.** Students collaborate with faculty on actual research projects, learning about both a particular topic in the Global Studies discipline and the research process in general and making an original contribution toward the scholarly understanding of the subject. Collaborative undergraduate research requires that Global Studies majors work closely with a faculty member. Research projects provide an intensive experience for the student that complements, enhances, and even surpasses the traditional classroom since the experience

normally involves presentation of research at an academic conference in the discipline. Students are considered the primary collaborator-learners with the faculty member as a collaborator-advisor. The main goal of collaborative inquiry is to build and enhance students' information literacy and higher-order critical thinking and communication skills. The professor and student(s) are/is expected to produce a research manuscript that could be presented at an academic conference/professional meeting in the discipline or submitted for consideration of publication to an academic journal. Course may be repeated up to a limit of 12 credits; but only up to 6 credits can be applied to the major. Prerequisites: sophomore standing, 2.5 GPA, and permission of the instructor/chair. 1-3 credits.

**GLB 498. Global Studies Research Capstone I.** Global Studies majors will develop a formal research proposal for an independent project based on knowledge from their courses and immersive experiences (collaborative undergraduate research, internships, global independent study, honors thesis, and/or the European Union Simulation). This course may be repeated for credit as topic changes. Prerequisites: Study abroad and junior or senior standing. Restricted to Global Studies majors. 1 credit.

**GLB 499. Global Studies Research Capstone II.** Global Studies majors will develop a major social science research paper that will be presented and completed at the end of the semester. Prerequisites: GLB 498. 1 credit.

**GLB 500.Independent Study.** Students may enroll in up to 3 credits of independent study during the final semester that they are preparing an honors thesis in Global Studies. This course may be repeated for credit as topic changes. 1-3 credits.

**GLB 501.Independent Research Abroad.** Global Studies majors will initiate and complete an independent study project during their study abroad experience under the direction and supervision of an LVC faculty member. This course may be repeated for credit as topic changes. 1-3 credits.

**GLB 550.Advanced Research.** Advanced Research. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-3 credits.

**GLB 599. Honors in Global Studies.** Students with junior or senior standing are eligible to apply for Departmental Honors in Global Studies. Students must have a GPA of 3.5 in their major courses and a cumulative GPA of at least 3.0. These requirements must be met both at the time of application and at the time of graduation. The honors program includes a substantial piece of work requiring extensive independent research, resulting in a high-caliber thesis. A thesis of this quality requires sustained research effort throughout at least one semester. Normally, students will develop and write their thesis as part of a GLB 500 Independent Study. Students who successfully complete and defend their Honors project will receive recognition on their College transcript. 0 credits.

**GMN 101.Elementary German I.** Introductory course in German. Aimed at developing basic communicative proficiency in German. Also offers insights into German-speaking cultures. Fulfills requirement: Language and Culture. \*Note: This course does not satisfy LAC, Formative, or any Constellation requirement for students enrolled prior to Fall 2019. 3 credits.

**GMN 102.Language and Culture in the German-Speaking World - Elementary Level.** This course is an active and immersive language and culture course, taught almost entirely in German in which students will develop elementary skills in listening, speaking, reading and writing in German, awareness of the cultures associated with German. Fulfills requirement: Language and Culture. Prerequisite: GMN 101 or placement test. 3 credits.

**GMN 201.Language and Culture in the German- Speaking World - Intermediate Level I.** This is an active and immersive language and culture course, taught almost entirely in German in which students will develop intermediate-level skills in listening, speaking, reading and writing in German, awareness of the cultures associated with German. Fulfills requirement: Language and Culture. Prerequisite: GMN 102 or placement test. 3 credits.

**GMN 202.Language and Culture in the German- Speaking World - Intermediate Level II.** This is an active and immersive language and culture course, taught almost entirely in German in which students develop higher intermediate-level skills in listening, speaking, reading and writing in German, awareness of the cultures associated with German, and intercultural competence. Fulfills requirement: Language and Culture. Prerequisite: GMN 201 or placement test. 3 credits.

**GMN 300.Advanced Applied German.** This is an active and immersive language and culture course, taught entirely in German in which students develop their communicative and intercultural proficiencies and apply these to their chosen major discipline by completing individualized, project-based course work at the advanced German level. This course may be repeated for credit as topic changes. Fulfills requirement: Language and Culture. Prerequisite: GMN 202, 280, or placement test. 3 credits.

**GMN 305. Summer Study in Germany.** This four-week German language and culture course provides students possessing intermediate to advanced proficiency with an intensive linguistic and cultural immersion in an authentic German university environment. It combines daily classroom instruction with organized cultural activities and excursions. Language of instruction is German. Offered each summer. This course may be repeated for credit as topic changes. Prerequisite: GMN 200 or equivalent, permission of the instructor. 4 credits.

**GMN 480.Capstone Senior Seminar in German.** This course is designed to be a culminating experience for the German major. As such, the focus of the course is on synthesizing knowledge from previous courses into a broad historical and cultural framework. Final project will take the form of an extensive research paper. Prerequisite: At least 20 hours of German credit. 1 credit.

**HIS 102.Recent Pennsylvania Politics and History.** This course focuses on the history and politics of Pennsylvania from the late 20th century to the present. We examine the main branches of government, voting and elections, key historical and political developments, and selected public policies. 1 credit.

**HIS 103. The Ancient World: World History from the Dawn of Civilization to the Fall of the Han and Roman Empires.** This course is a study of world history from the development of human civilizations around 3500 BCE to the end of the first era of empire-building in China and Rome, ca. 200-400s BCE. Topics include the advent of civilizations; the formation of great philosophies and religious traditions; and the first empires. This course is organized geographically and chronologically within the examination of the civilizations of the Near East (Mesopotamia, Egypt, and Persia, India, China, Greece, and Rome. Fulfills requirement: Intercultural Competence. 3 credits.

**HIS 104. The Second Age of Empires: World History from Rome and the Han Dynasty to the Mongols.** This course is a survey of the second phase of world history spanning the period of the fall of Rome and Han Dynasty (220-500) to the end of the Middle Ages in Europe and the Mongol invasions in Asia and Russia (ca 1400s). Civilizations covered include the major Western European empires (Rome/Byzantium), the Han dynasty in China and its successors, and the Islamic caliphates. It also examines the peripheral regions influenced by major empires (Western Europe, Japan, and sub-Saharan Africa). This course focuses on the themes of empire-building, cultural diffusion, and cross-cultural contact. The course encourages students to reflect on how past cultures have shaped the different subcultures that make up the US and to develop intercultural awareness. Fulfills requirement: Intercultural Competence. 3 credits.

**HIS 105. Formation of the Modern World.** This survey of modern world history (ca. 1450 to the present) explores key developments in the formation of the modern world, from the knitting together of Afro-Eurasia and the Americas to the emergence of global capitalism, colonization, and the nation-state system to the world wars of the 20th century, the Cold War and its aftermath, the process of globalization, the rise of Islamic extremism, and the intensifying impacts of global climate change. Bringing past and present together into a coherent analytical framework, the course encourages students to analyze contemporary global and domestic issues from diverse cultural perspectives, and to engage in ongoing reflections about their own culture and other cultures. Fulfills requirement: Intercultural Competence. 3 credits.

**HIS 112. Rigged: The Rise and Decline of the American Middle Class.** Since 1945, the vast majority of the United States have described themselves as middle class. Until the 1970's, to be middle class was to be economically secure; a steady job, home ownerships, and money for modest vacations and retirement. In recent years, many who consider themselves middle class feel stressed rather than secure. Their pay is declining or stagnant, they struggle to pay for college, and they have little saved for retirement. This class analyzes the public policies and economic trends that have undermined the lives of tens of millions of Americans. Students are encouraged to understand the issue and consider what could be done about it. Fulfills requirement: Quantitative Reasoning. 3 credits.

**HIS 125. United States History to 1865.** The major events and developments in America from Columbus to the Civil War, with emphasis on the creation of a distinctive American society from the interaction of different cultures, ethnic groups, and ideas. Major themes include the transformation of European cultural ideas in colonial America and the impact of republican ideology, democratization, and the spread of the market economy between the Revolution and the Civil War. Fulfills requirement: Intercultural Competence. 3 credits.

**HIS 126. With Justice for All?** Since the end of the Civil War, Americans have changed their conception of who belongs to "We the People." Moreover, we have also reconsidered the appropriate role of government for citizens and the world. This course provides an introduction to those controversies in the past and present. Fulfills requirement: Intercultural Competence. 3 credits.

**HIS 150. The Business of History.** This course is designed to orient History majors (and humanities majors more generally) to the wide variety of occupations available to them. Some go into law, business, public policy or politics, while others work in museums, archives, national parks or the military. Students will be introduced to people applying their degrees to the real world, and will survey ways to research professional opportunities. 1 credit.

**HIS 202. Historical and Cultural Geography.** An introduction to historical and cultural geography in various parts of the world, focusing on prominent scholars and schools of thought that examine key aspects of the ways in which distinct, historically-constituted communities and cultures have interacted with the natural world over time, with special emphasis on the fossil fuel economy, climate change, agriculture, land use, urbanization, transportation, settlement, industry, migration, and disease. Fulfills requirement: Intercultural Competence. Prerequisite: Sophomore standing or permission of instructor. 3 credits.

**HIS 207. Europe in the 20th Century.** An introduction to the main political, social, economic, and intellectual developments in twentieth-century Europe. The major themes of the course include the experience of two world wars; the development of fascist and communist regimes under Lenin and Stalin, Mussolini, and Hitler; the weakness of the western democracies after World War I; the Holocaust; the Cold War; the Communist Bloc after World War II; the end to colonialism; the European Union; the development of the welfare state; and the new right-wing nationalism. Fulfills requirement: Critical Thinking through Writing. Prerequisite: Sophomore standing, at least one college level history, politics, or global studies course; major or minor in history; or permission of the instructor. 3 credits. [This course is cross-listed with POL 207]

**HIS 215. Law and Government.** This course uses key cases to study important doctrines established by the Supreme Court with respect to the structure and functions of the constitutional system (judicial, legislative and executive power and federalism). There is a particular emphasis on various forms of textual interpretation used by individual justices to apply the Constitution in deciding cases and writing opinions. Prerequisites: Sophomore standing or permission of the instructor. 3 credits. [This course is cross-listed with LAW 215]

**HIS 217. Women in Modern Europe, 1750 to the Present.** An exploration of the position of women in Modern Europe from 1750 to the present. The course focuses on the tensions between women's difference and demands for equal treatment as this theme has played out through modern European history. The course will begin with a discussion of gender in history and then proceed to examination of women in pre-industrial Europe, the French revolution, the industrial revolution, nineteenth-century reform movements, feminism and the suffrage movement. Twentieth-century themes include the "new woman", women in communist Russia and under the fascist regimes, the impact of two world wars on women's roles, the welfare state, and finally, contemporary feminism. Fulfills requirement: Intercultural Competence. Prerequisite: Sophomore standing, at least two college level history courses; major or minor in history, politics or global studies; or permission of instructor. 3 credits.

**HIS 223. American Thought and Culture.** A survey of American intellectual history and cultural criticism ranging from Puritanism and Enlightenment Rationalism to multiculturalism, feminism, and post-modernism. 3 credits.

**HIS 240. American Military History.** An analysis of American military institutions from Old World tradition to the post-Persian Gulf era with emphasis on the U. S. Army. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**HIS 241. The American Worker.** Since the industrial revolution, the working-class has helped to remake the modern world. Workers' movements have shaped political debates over slavery, voting rights, the creation, expansion, and definitions of social welfare programs. Fulfills requirement: Intercultural Competence. Sophomore standing or permission of the professor. 3 credits.

**HIS 250. The Historian's Craft.** An introduction to the basics of historical research and writing. The most important goal of the course is to help students produce a clearly written research paper, with footnotes and a bibliography. A primary source paper and other writing assignments will

prepare the students for the achievement of this goal. Class discussion will revolve around analysis of various types of primary sources, secondary sources, journal articles, issues of interpretation, and research methods. The course will also include several research trips to libraries, archives, historical societies, or local history collections. Fulfills requirement: Critical Thinking through Writing. Prerequisites: At least two 100-level history courses; or permission of the instructor. 3 credits.

**HIS 251. Topics in Political History.** This course will examine specific topics in political history, with a focus on either US, European, African, or Latin American political history. Specific topical emphases might include 19th and 20th Century US Political History; the impact of Colonial and Post-Colonial African Political History; Populist Politics in 20th & 21st Century Latin America; and Transformation in European Political Systems in the 20th & 21st Centuries. Topics will be announced two years in advance. This course may be repeated for credit as topic changes. Prerequisites: Sophomore standing, and at least two 100-level courses in History; or permission of the instructor. 3 credits.

**HIS 252. Topics in Economic History.** This seminar will focus on topics in economic history. The modern market economy has created unprecedented productivity growth that has lifted billions of people out of grinding poverty. For the first time in history, there are more people who are overweight than underfed. This course examines the origins and the current state of a world economy with profound contradictions and possibilities. We delve into the various ways the modern economy emerged and the different paths taken by different countries, or by the United States at different points in time. We also look at the various ways that historians and other scholars have understood the economy. This course may be repeated for credit as topic changes. Prerequisites: Sophomore standing, and at least two 100-level courses in History; or permission of the instructor. 3 credits.

**HIS 253. Topics in Comparative History.** This seminar will focus on topics in comparative history with a focus on European, Asian, and African history. Topics might include World War I, imperialism, nineteenth-century Europe, revolutions, or religion and violence. The comparisons might be within the context of European history, or might compare topics across the continents of Europe, Africa, and Asia. This course may be repeated for credit as topic changes. Fulfills requirement: Critical Thinking through Writing. Prerequisites: Sophomore standing, and at least two college level history courses; major or minor in history, politics or global studies; OR permission of the instructor. 3 credits.

**HIS 254. Topics in the History of the Americas.** This seminar focuses on questions, issues, and themes in the history of the Americas (i. e., the Western Hemisphere). Topical and thematic emphases might include: Race, Class & Gender in the Americas from the Age of Revolution to the Present; Comparative Slavery & Post-Emancipation Societies in the Americas; Social Movements & State Formation in the Americas; and the Americas during the Cold War. Topical focus will be announced two years in advance. This course may be repeated for credit as topic changes. Prerequisites: Sophomore standing, and at least two 100-level courses in History; or permission of the instructor. 3 credits.

**HIS 260. History of Managerial Thought.** The rise of large-scale corporations remade the economic landscape of the US and eventually the world. This course helps you to understand the evolving role of managerial thought and practice as it has changed from the 1850s to the present. Fulfills requirement: Critical Thinking through Writing. Prerequisites: Sophomore standing, or permission of the instructor. 3 credits. [This course is cross-listed with BUS 260]

**HIS 275. Modern Latin America.** This course examines the histories and cultures of the nation-states and peoples of modern Latin America, focusing on the period from the Age of Revolution to the present day. Major topics include the principal legacies of the precolonial and colonial periods, the formation of nation-states from the early 19th century, social and cultural history, race relations, class formation, neocolonialism, US-Latin American relations, economic dependency, political transformations, dictatorship and democracy, social revolution and counterrevolution, and the enduring conflict between progressivism and neoliberalism. Fulfills requirement: Intercultural Competence. Prerequisite: Sophomore standing or permission of instructor. 3 credits.

**HIS 287. War and Violence.** War is an important part of the human experience in the past and present. This course will help students to understand the allure and limits of war as an experience, a metaphor, and a solution to human conflict. Fulfills requirement: Intercultural Competence. Prerequisites: Sophomore standing, or permission of the instructor. 3 credits.

**HIS 288. Black and White, in Color.** Film is an important way that Americans make sense of their country, its history, and their own identities. Films about the past serve contemporary needs as much or more than factual accuracy. Most historical films about slavery, the civil war, or race relations reveal as much about the times they were made than the times they portray. This course will expose students to classics of American cinema and some of the most innovative scholarship on the history of race in America. Fulfills requirement: Intercultural Competence. Prerequisites: Sophomore standing, or permission of the instructor. 3 credits.

**HIS 310. Seminar on World War I.** This course provides an in-depth study of World War I. The topics covered include the causes of the war; the military history of the war; the social, economic, and cultural changes that resulted; the terms and consequences of the peace; and ways in which the memories of the war were constructed. Although the course will focus on Europe where most of the war was fought, students will also examine the impact of the war on Russia and Europe's overseas colonies. Prerequisites: Junior or senior standing and one prior history class or permission of the instructor. 3 credits.

**HIS 312. The American Revolution.** An in-depth study of why Americans declared their independence and how they won the Revolution and worked to build a republic in a hostile world of monarchies. Particular attention is paid to major issues on which historians of the period disagree. Prerequisite: Sophomore standing or permission of the instructor. 3 credits.

**HIS 315. The Civil War.** A study of how sectional divisions over slavery led to a bloody war and reshaped American society. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**HIS 328. Film and the American Identity.** This interdisciplinary course will critically examine how films reflect, construct, and question the dominant image and understanding of the American identity. Prerequisite: Junior or senior standing. 4 credits.

**HIS 350. Introduction to Public History.** This course introduces students to the field and practice of public history, or "history beyond the walls of the traditional classroom." We explore the many ways that historians, curators, archivists, and others research, preserve, and present historical topics to public audiences in museums, archives, historical societies, and via electronic media. Exposing students to the theories and practices on the presentation of history to public audiences, the course combines in-class study, presentations by public history experts, service-learning at an

area museum, archive, or historical society, and student presentations of their service-learning projects. Prerequisite: Two courses in History; at least one at the 200-level or above. 3 credits.

**HIS 354. Issues in Contemporary Europe.** This course focuses on what it means to be European in today's world. As a continent connected to Asia, where does Europe end and Asia begin? How has the end of the Cold War reshaped Europe? To what extent has the European Union shaped Europe and the meaning of being European? What are the shared values that define Europe? How has immigration changed what it means to be European? This course addresses these questions through discussion of class readings, current events, and written exercises. At the end of the semester, students will complete a project related to their major based on examination of a current event. Fulfills the disciplinary perspectives general education requirement. Prerequisite: Junior or senior standing. 3 credits.

**HIS 356. Liberty and Justice.** This multi-disciplinary seminar will consider the relationship in contemporary society between individual freedom and moral-political equality. To this end, students will study the main doctrines advanced in libertarian, classical liberal, modern liberal, and communitarian thought, and critically evaluate the various strengths and weaknesses of each approach. Prerequisite: Junior or senior standing. 3 credits.

**HIS 362. Multiculturalism and the American Identity.** This class offers you a chance to familiarize yourself with the variety of ethnic, racial, gender, and sexual groups and identities in the U. S. You will gain or enhance your intellectual framework for understanding and appreciating diversity. It also will prepare you to survive and thrive in our complex and challenging world. The course relies on history, literature, and cultural studies and will be challenging but also fun. 3 credits.

**HIS 400. Internship.** Field experience related to student's work, research interests, or graduate school plans. A journal and paper in addition to fieldwork are required. Students may take up to 6 credits per semester and up to 12 credits during the summer. Fulfills requirement: Immersive Experience. Prerequisites: Junior or senior status; overall GPA of at least 2.5; completion of registration forms; approval of internship site by student's advisor prior to registration; approval of department chair. 1-12 credits.

**HIS 460. Undergraduate Research.** This course is designed to provide students in political science, history, and international studies opportunities to obtain credit for engaging in undergraduate research projects under the faculty supervision. Students engage in research projects with faculty on a range of topics, subject to approval of the individual faculty member. Course may be repeated up to a limit of 12 credits; but only up to 6 credits can be applied to the major. Prerequisites: Completion of one course in History; sophomore standing, 2.5 GPA, and permission of the instructor/ chair. 1-6 credits.

**HIS 499. Senior Seminar in History.** Focus on a theme in history such as World War I, the industrial revolution, or the Enlightenment. These topics will be approached from a variety of perspectives (economic, political, or social for example) and from the viewpoint of many national histories. Class meetings will include discussion of course readings, research methods, and the historiography related to the theme of the course. Students will write a research paper on some aspect of the course topic utilizing a variety of primary and secondary sources and present their research to the class. Prerequisites: Senior history majors or permission of instructor. 3 credits.

**HIS 550. Advanced Research.** Advanced Research. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-3 credits.

**IDS 179. VALE Conference.** A first-year through senior-level course for all interested majors. The class provides real-world experience in creating and hosting a major event attracting professionals from all areas of the music/media industries to VALE Music Group's all day conference each fall. This class involves marketing, sales, logistics, communications, design, budgeting, and many other applied skills. May be repeated for credit. Fulfills requirement: Immersive Experience. 1 credit.

**IDS 199. VALE Records.** This course is the nucleus of the recording label branch of the VALE Music Group LLC. Students of all majors are invited to apply various skills in the real-world environment of an actual record label, including marketing, e-commerce, music recording, artist development, copyright clearance, publishing, and more. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1 credit.

**IDS 210. Intergroup Dialogue.** Topic to be determined at time of course schedule publication. This course may be repeated for credit as topic changes. Fulfills requirement: Intercultural Competence. Prerequisite: At least sophomore standing. By instructor permission only. 3 credits.

**IDS 280. Honors Independent Learning Lab.** This course allows Honors students to complete an individualized syllabus within a structured environment. Honors students may use this class to: conduct a literature review on a topic of interest, frame and complete individualized IME proposals, or conduct Honors contract work linked to a course or capstone experience. Graded pass/fail. This course may be repeated for credit as topic changes. Prerequisite: FYE 111 and FYE 112, and sophomore are higher. 1 credit.

**IDS 480. E. A. T. Research Group II: Project Implementation.** This course serves as part two of the yearlong course sequence associated with the EAT Research Group. Students who developed their initial research plan in the EAT: Food Studies course during the fall semester will now develop an implementation plan and work with Metz Culinary Management to realize their project within the college's dining hall. The course involves class time dedicated to research methods, data/result analysis, and research presentation/publication. Students who take this course will be required to present their research at the Inquiry event and are encouraged to present at a major food studies conference the following summer. Fulfills requirement: Immersive Experience. Prerequisite: ITG 499 ("E. A. T. Research Group I: Food Studies") and permission of the instructor. 3 credits.

**IME 105. Music Ensemble.** Major music ensembles, including Marching Band, Symphonic Band, Symphony Orchestra, Concert Choir, and College Choir. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Corequisite: a 100-level music ensemble (MUE) course. 0 credits.

**IME 107. Acting Ensemble Practicum.** An immersive experience aimed at students cast in major, supporting, minor, and chorus roles in production for the Wig & Buckle Theater Company, LVC's student-run resident theater company since 1934. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: participants must audition for the specific show and be cast by

the show's director and casting committee. Contact the executive director of the Wig and Buckle Theater Company in the English department for more information. 0 credits.

**IME 108. Adaptive Sports Volunteer Experience.** Students will participate in an intensive volunteer experience that involves supporting an adaptive sport or other such organization that provides athletic and recreational opportunities to individuals with disabilities. Fulfills requirement: Immersive Experience. Prerequisite: freshmen, sophomores and juniors in good academic standing. Students from all majors will be considered, however, students from physical therapy, athletic training and communication science and disorders majors will be given priority due to the direct connection between this experience and the health professions. A letter of interest and a brief in-person interview will be required as application for this course. Dependent upon the requirements of the accepting organization, students must be willing to obtain child abuse training and possibly have a criminal background and sexual abuse clearances obtained (fees incurred by the interested student if required by the agency with which the student is volunteering). Contact the physical therapy department for more information. 0 credits.

**IME 110. Living and Learning in Service Experience.** Through this immersive experience, students will: explore the idea of service and the place it holds in society and in our lives; critically examine questions such who serves, who is the recipient of service, who "deserves" to be served, who benefits from being served and what are the effects of service; develop their understanding of the scope and complexity of various human/environmental/societal needs and injustices including who is affected, how they are affected, the larger impact on community both locally and globally, how these needs are similar and different from one another, how they impact the students personally; grow their understanding of who they are as "servants" and the role that plays in their lives; and take part in applied/hands on learning through service projects that will enhance team-work and leadership skills and provide real world experiences that are both transferable and marketable. Graded pass/fail. Fulfills requirement: Immersive Experience. 1 credit.

**IME 130. Interfaith Honor Society.** =LVC's Interfaith Honor Society (Lota Eta Sigma) encourages student exploration of the faiths of others in light of the student's own religious identity both in and beyond the classroom. Students are inducted within the Society once program requirements are met. Completion may occur at any point during a student's enrollment at Lebanon Valley College. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Office of Spiritual Life required. 0 credits.

**IME 140. Alternative Break Service Trip.** Through LVC's Alternative Break Trip program, students travel in a group to serve within a community outside of the central Pennsylvania area. Five full days of service are complemented by evenings of extended individual and group reflection with the goal of connecting and extending knowledge from their academic studies to issues facing the community. One afternoon and evening of celebration allows for exploration of the cultural assets of the area. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Office of Service and Volunteerism required. 0 credits.

**IME 150. Resilient Well-Being Through Mindfulness.** This course is designed to develop students personally and professionally by building their mental resources to become more resilient. Students will read the book *Resilient: How to Grow an Unshakable Core of Calm, Strength, and Happiness* by Rich Hanson over the course of the semester. With the book as a guide, students will engage in daily reflective journaling, weekly meditation, weekly book club meetings, and get introduced to mindful movement and eating practices. The goal of the course is to develop resilient well-being by learning about, refining, and implementing diverse mental resources that will enable us to become more centered personally and professionally. The course will culminate in a one-day mindfulness meditation retreat. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 0 credits.

**IME 181. Athletic Travel Abroad: Italy.** This 10-day travel abroad program for the men's soccer team will immerse student athletes in the history, people, and culture of Italy through training/game opportunities, sight-seeing, and education tours. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Students attending this trip must be on the men's soccer team and meet the team's standards, including academic and on-field expectations. 0 credits.

**IME 203. Actuarial Science Summer Camp Resident Assistant.** Students will serve as resident assistant for high-school visitors attending the Actuarial Science Summer Camp. During the day, students will be responsible for facilitating classroom activities and presentations supporting the learning goals of the summer program. During the evening, students will be responsible for the well-being of the visitors and for facilitating social activities. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by the Actuarial Science Camp's Faculty instructor. 0 credits.

**IME 204. Peer Mentor.** A First Year Mentor is an undergraduate student who leads a group of approximately 10-20 first year or transfer students throughout their first year at LVC. The First Year Mentor relationship develops before the orientation weekend and ends with the conclusion of the spring semester. The primary mission of the program is to ease the transition of new students to Lebanon Valley College and encourage their success personally, socially, and academically throughout their first year. Additionally, the program helps each new student connect with other peers, support systems, and, ultimately, the institution as a whole. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by Student Affairs. 0 credits.

**IME 205. Resident Assistant.** A Resident Assistant (RA) oversees a floor or wing in a residence hall under the direct supervision of an Area Coordinator (a Residential Life professional staff member). The RA serves as a resource for residential students and provides a residential environment conducive to the overall development of students. The RA role encompasses programming, administrative, and student development responsibilities. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by the Office of Residential Life. 0 credits.

**IME 206. Sustainable Living.** The sustainability house on Lebanon Valley College's campus gives students the opportunity to reside in a living-learning community dedicated to issues of environmental sustainability where they can interact with peers, faculty and staff, and the community as a whole in meaningful ways. Students living in the house will develop a project focused on an aspect of sustainable living that will make a concrete contribution to the Sustainability House and/or the broader LVC community. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: selection for the Sustainability House by the Office of Residential Life. 0 credits.

**IME 210. Theory and Practice of Tutoring.** This course explores peer tutoring from various perspectives that highlight the situated nature of the learning process. Students will learn about the theoretical foundations of and best practices for peer tutoring, focusing on effective group tutoring.

Course requirements for all Pod Leaders (chosen by recommendation only). Graded pass/fail. Fulfills requirement: Immersive Experience. Pod leaders are chosen based off several criteria: (1) Students must be recommended by the professor, who identifies strong students based off leadership capabilities, class performance, and reliability; (2) Students must have at least a 3.0 cumulative GPA; (3) Student must have completed the course with a B+ or higher; (4) Student must complete an interview with the Director of the Center for Writing & Tutoring Resources, during which the Director will explain the IME and ensure the student has adequate time to devote to the course; (5) Student must complete an online training program consisting of six modules before tutoring can begin. 1 credit.

**IME 211. Laboratory Teaching Assistant in the Natural Sciences.** The student will spend up to 15 weeks (at least 45 hours) assisting a faculty member in a laboratory course. During this time, the TA will develop their own pedagogical skills, grow into a mentoring role, and gain a more sophisticated understanding of the course material. The student may be asked to help set up and take down experimental apparatus, prepare reagents, monitor student progress during the laboratory period, help guide students in their learning, answer student questions, and offer feedback to both students and faculty. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by a natural sciences department. 0 credits.

**IME 212. Counseling Services 50/50 Peer Helper.** Under the supervision of the Office of Counseling Services, 50/50 Helpers provide support for peers who encounter academic, emotional, and social issues. Selected students are trained in competencies essential for success as a peer helper: listening skills, group process, introduction to emotional issues typically seen by 50/50 Helpers, office policy and procedures, modes of outreach (athlete orientation, group facilitation, educational programs, newsletter articles), responding to crisis, Title IX, and bystander intervention. We use role-play exercises to prepare for suicidal ideation, sexual assault reporting, and panic attacks, among other common presenting problems. Throughout the year, students develop clinical skills during 7-10 hours/week of office hours. Duties include meeting with peers on a walk-in basis, facilitating groups over the weekend, and attending weekly supervision with the director & other licensed staff. 50/50 Helpers are often used as a referral source for the professional clinicians & staff when a student of concern is in need of social skills training, tutoring, mentoring, or emotional support of adjustment issues. By the end of spring semester, they are tasked with developing and executing an educational outreach program entirely on their own. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of the Director of Counseling Services. 0 credits.

**IME 215. Health Program for Individuals Experiencing Homelessness.** This is an immersive experience in which students will act as members of a research team conducting an assessment of the effectiveness of a physical activity program to improve mental and physical health in individuals experiencing homelessness. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete a brief online essay for selection. Essay link is: [https://lvc.qualtrics.com/jfe/form/SV\\_2iqYgzu3AxNDFcx](https://lvc.qualtrics.com/jfe/form/SV_2iqYgzu3AxNDFcx). Faculty will contact students regarding selection. 0 credits.

**IME 228. BOSS Teaching Program.** The BOSS (Building Our Soft Skills) program focuses on teaching elementary students essential personal skills they will need in order to be confident, successful, and well-rounded individuals both inside and outside of the classroom. This experience enables preservice teachers to be actively engaged in the classroom by teaching brief lessons on important concepts of life that are not directly taught in the common core curriculum. This experience serves as a helpful stepping stone for preservice teachers before student teaching is a requirement. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by the education department. 0 credits.

**IME 230. Putnam Competition.** The Putnam Competition is arguably the most challenging and prestigious mathematical competition for undergraduates in the US and Canada. Students will engage in small group problem solving sessions with peers and faculty in order to develop skills and strategies for approaching challenging mathematical problems. In December, students will apply these skills by taking part in the competition. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: Completion of MAS 112 (or MAS 162, with approval) and application through the Mathematical Sciences department. 0 credits.

**IME 232. Intergroup Dialogue.** This experience will immerse students in dialogue across differences of identity. Students will participate in at least five co-curricular Intergroup Dialogues, two sessions of the Symposium on Inclusive Excellence, and one Intergroup Dialogue course (IDS 210). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: previous or concurrent registration in IDS 210 and approval of the chair of the English department. 0 credits.

**IME 243. Semester in Shanghai, China.** This fall semester program offers students the opportunity to take an introductory Mandarin language course, combined with relevant contextual courses that will help students further understand Chinese culture, earning a total of 15 credits (excluding this IME course, which does not carry credit). The courses examine the development and role of a global China over recent years, with a focus on their history, culture, business and politics. A challenging part-time internship in a variety of disciplines is available to students, at all levels of language ability, in businesses, non-profits and non-government agencies. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 249. Semester in London, England.** This fall semester program offers students in any major the chance to complete certain LVC major/minor, general education, and elective requirements in a suburb of the world's most livable large cities. Students will attend Kingston University with British natives and other multinational students enrolled in a wide range of stimulating and flexible courses, earning up to 16 credits (excluding this IME course, which does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 251. Semester in Montpellier, France.** This fall semester program offers students in any major who want to improve their knowledge of the French language and culture the opportunity to take courses in almost all areas of concentration, earning up to 17 credits (excluding this IME course, which does not carry credit) toward the French major/minor. Montpellier, as the regional capital of Languedoc-Roussillon, plays a predominant role in the development of southern Europe. The school is ideally located right in the heart of the historic city center, offering a unique combination of high-level education and culture. Montpellier is primarily a university-city of 50,000 students, more than 2,000 coming from all over the world. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 253. Semester in Berlin, Germany.** This fall or spring semester program is offered to students in any major who have completed at least one year of college-level German language. Courses are tailored to Americans at the beginner, intermediate, or advanced German language level, with courses also offered in English. Students will earn up to 17 credits (excluding this IME course, which does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 255. Semester in Perugia, Italy.** The Umbra Institute provides LVC students fall and spring semester program options in the medieval city of Perugia, Italy. Students can choose from a variety of courses with integrated field trips to famous Italian cities and sites, community engagement opportunities outside of the classroom, and extra-curricular activities, earning a total of 15 credits (excluding this IME course, which does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 258. Semester in Hamilton, New Zealand.** This fall or spring semester program offers students the opportunity to take four courses abroad in almost any concentration, earning a total of 16 credits (excluding this IME course, which does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 260. Semester in Belfast, Northern Ireland.** This spring semester program offers Audio and Music Production majors the opportunity to take courses in their major at a large university, earning a total of 16 credits (excluding this IME course, which does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 263. Semester in Valladolid, Spain.** This fall or spring semester program offers students in any major who have completed coursework in Spanish at the intermediate-level plus one advanced Spanish course, the opportunity to participate in a total immersion cultural experience, earning up to 17 credits toward the Spanish major/minor (excluding this IME course, which does not carry credit). Valladolid, the largest regional capital in Europe, is located about 100 miles northwest of Madrid. It is famous for the purity of its spoken "Castellano," or Castilian Spanish. The program is located at the Universitas Castellae, a private institution dedicated to teaching the Spanish language to university students from other countries. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 267. Semester in Philadelphia, Pa.** This fall or spring semester program offers students in any major the chance to complete an internship in a city while earning 16 academic credits (excluding this IME course, which does not carry credit). The Philadelphia Center provides opportunities for professional exploration, intellectual development, and personal growth in the heart of America's fifth largest city. Their accredited program features field placements, academic courses, and independent living. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 269. Semester in Washington, DC.** This fall or spring semester program offers students in any major the chance to complete an internship in the heart of our nation's capital while earning 15 academic credits. The Washington Center provides opportunities for professional exploration, intellectual development, and personal growth. Their accredited program features a field placement, forum, and an elective class. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 270. Study Abroad in Quebec, Canada.** This three-week summer program offers students the opportunity to enroll in a four-credit intermediate or advanced French language and culture course at a study institute in Quebec City, Canada (note: this IME course does not carry credit). Students live in a French-speaking homestay arrangement. Participation is open to students in any major. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 271. Study Abroad in Costa Rica.** This four-week summer program is offered to students in any major who have an interest in broadening their Spanish language and Hispanic cultural knowledge. Students can earn six credits with this beginning, intermediate, or advanced proficiency Spanish language course that will apply toward a major or minor in Spanish (note: this IME course does not carry credit). Students live with different Costa Rican host families over the four-week program duration in three different cities: Flamingo, Monteverde, and San Joaquin de Flores. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 272. Study Abroad in London, England (World Religion).** This one-week spring break program is an optional one-credit experience embedded into one or two LVC world religion courses on offer during the spring semester. Participation is open to students enrolled in the three-credit parent course (note: this IME course does not carry credit). Students will learn through class instruction, visiting lectures, and excursions to religious sites and tourist attractions. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 273. Study Abroad in London, England (Education).** This three-week summer program will focus on comparing the U. K. with the U. S. education system, with a focus on British Children's Literature. Students will earn three credits through in-class instruction, visiting lectures, and excursions to museums and popular tourist attractions (note: this IME course does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 274. Study Abroad in London, England (Music Education).** This three-week summer program will focus on comparing and contrasting the national music education curriculum in the U. K. with our state curriculum in the U. S., with specific examination of the Musical Futures curriculum. Students will earn three credits through in-class instruction, host school visits for teaching observations, and excursions to museums and popular tourist attractions (note: this IME course does not carry credit). This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 275. Study Abroad in Ormskirk, England.** A 3-week program studying and traveling in the glorious countryside of England's Lake District. Students will participate in a three credit EDU 450 course, Teaching the Young Adolescent, Aged 10-15, at Edge Hill University in Ormskirk (note: this IME course does not carry credit). This will include an invaluable practicum experience in an English Middle School setting. This course may

be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 279. Study Abroad in Wurzburg, Germany.** This four-week summer program is offered to students in any major who have completed at least two years of college-level German language. The program combines daily intensive classroom instruction with organized cultural activities and excursions. Students will enroll in a four credit advanced German course that can be applied toward a major or minor in German (note: this IME course does not carry credit). The course is taught by experienced German faculty from LVC. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 282. Study Abroad in Perugia, Italy.** This summer program in Perugia, Italy is offered in conjunction with the three-credit course: Gastro-Philosophy: Reflections on Place, Time, and Identity (note: this IME course does not carry credit). Students will be led on excursions to sites such as an Italian butchery, a local vineyard, and an overnight trip to Venice. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 284. Study Abroad in Maastricht, Netherlands.** This summer program offers students in any major the opportunity to learn about the different facets of Europe and the European Union. Students enroll in two courses, for a total of six credits earned (note: this IME course does not carry credit), which focus on the economic and socio-cultural aspects of Europe. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 287. Study Abroad in Barcelona, Spain.** This three-week study abroad program will immerse students in the art and culture of Barcelona, Spain. The three credit course will cover topics including the architectural evolution of the city from its ancient origins to the present, the development of the Modern art movement in the work of pioneering artists such as Picasso and Dalí, and the contemporary aesthetic of Barcelona as a global center of cultural tourism (note: this IME course does not carry credit). The class will travel to numerous sites of interest in Barcelona and the surrounding region of Catalonia, providing students with ample opportunities for exploration and on-site learning. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 291. Semester Abroad Through an Unaffiliated Program.** Students may pursue their own semester abroad through a program unaffiliated with LVC. Students are required to obtain prior approval of the program and its courses. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 292. Semester Away in the U. S. Through an Unaffiliated Program.** Students may pursue their own semester away in the U. S. through a program unaffiliated with LVC. Students are required to obtain prior approval of the program and its courses. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 293. Study Abroad Through an Unaffiliated Program.** Students may pursue their own short-term study abroad through a program unaffiliated with LVC. Students are required to obtain prior approval of the program and its courses. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 294. Study Away in the U. S. Through an Unaffiliated Program.** Students may pursue their own short-term study away in the U. S. through a program unaffiliated with LVC. Students are required to obtain prior approval of the program and its courses. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 0 credits.

**IME 300. Summer Research in the Sciences.** Summer research is undertaken by students for 4-10 weeks. Students work full time (35 hours per week) per week. The student works with a specific research advisor on a project related to that advisor's area of research. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application to and selection by the applicable science department. Students should discuss interest in this opportunity with their academic advisor. 0 credits.

**IME 307. Directing/Stage Management Practicum.** An immersive experience aimed at students holding directing and stage manager positions for the Wig & Buckle Theater Company, LVC's student-run resident theater company since 1934. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: directors are elected by the Theater Company in the spring before the season in which the work will take place; stage managers submit resumes to the director and the faculty advisor. Contact the executive director of the Wig and Buckle Theater Company in the English department for more information. 0 credits.

**IME 315. Writing: A Life Assistant Director.** The Writing: A Life Assistant Director position offers a student the opportunity to have substantive involvement in the execution of the current academic year's Writing: A Life series and in the planning of the following academic year's Writing: A Life series. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: Application to and approval by the Writing: A Life faculty director in the English Department. 0 credits.

**IME 316. Green Blotter Editorial Staff.** Green Blotter is Lebanon Valley College's long-standing literary journal. The student editorial staff members are responsible for selecting and editing creative works for inclusion in the journal, works which may be submitted for consideration from any student around the globe currently enrolled in an undergraduate program. The editorial staff is also responsible for the layout of the journal and may have additional responsibilities, as well, including special events, outreach and advertisement, and other activities as necessary. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: application through and selection by the Green Blotter faculty advisor in the English department. 0 credits.

**IME 345. Institute for Educational Governance and Leadership: Critical Analysis of Key Issues in Educational Research, Policy, and Practice.** In this immersive experience students will engage in educational research, academic/intellectual practice. This immersive experience requires that students identify and analyze issues within educational policy, practice, governance and leadership. This will occur through the use of various methodological approaches (all contingent and reflective of the topic and focus of the research inquiry), as fleshed out by IEGL Director and students. Specifically, this Immersive Experience will focus on issues in education pertaining to the K-12 context. Students will interrogate these issues by asking questions regarding the relevance of topics to education and their importance to Pennsylvania. As student researchers they will focus on a topic either selected by them or pre-selected by instructor and spend a semester researching, reflecting, and developing a project that reflects their understanding of this topic and demonstrating what they have learned through a developed literature review, reflective paper and

poster. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of the IEGL Director. This experience is open to all majors. 0 credits.

**IME 400. Internship.** Practical and professional work experience, off campus, related to the student's educational pursuits and/or career interests and involving at least 45 working hours. This designation is for internships that are not for academic credit, but meet the college's criteria for an immersive experience. Internships must address required learning objectives related to professional development. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a faculty member from a department related to the focus internship and completion of an internship form, available on the Registrar's Office website. 0 credits.

**IME 405. Leadership in Athletics.** This experience offers immersive experience credit to fourth-year and above LVC athletes who have been a member of an LVC athletic team for at least two years. These students will complete a written reflection and give a presentation discussing the leadership and professional skills that they have gained through their time on the team. Students may only count one sport toward the Immersive Experience requirement. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of the appropriate coach during the semester of eligibility. 0 credits.

**IME 501. Independent Immersive Experience: Creativity.** Independent Immersive Experience focusing on creativity. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete an application form available on the Registrar's Office website. 0 credits.

**IME 502. Independent Immersive Experience: Intellectual Engagement.** Independent Immersive Experience focusing on intellectual engagement. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete an application form available on the Registrar's Office website. 0 credits.

**IME 503. Independent Immersive Experience: Intercultural Awareness.** Independent Immersive Experience focusing on intercultural awareness. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete an application form available on the Registrar's Office website. 0 credits.

**IME 504. Independent Immersive Experience: Comprehensive Leadership and Professional Development.** Independent Immersive Experience focusing on leadership and professional development. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete an application form available on the Registrar's Office website. 0 credits.

**IME 505. Independent Immersive Experience: Community Engagement.** Independent Immersive Experience focusing on community engagement. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: approval of a supervising faculty member and the chair of the General Education Committee. Students must complete an application form available on the Registrar's Office website. 0 credits.

**ITG 468. Integrative Experience in the Natural Sciences I.** This sequence of three one-credit courses challenges students to critically examine a scientific topic, problem, or area of conjecture, through a project-based learning experience. By completing a project proposal, a reflective, intellectual autobiography, a research paper, and a final poster presentation, students will investigate an aspect of science and how it affects the world outside of science or how science is affected by the world. This course may be repeated for credit as topic changes. Prerequisite: CHM-213 or PHY-211; or by permission of the instructor. 1 credit.

**ITG 478. Integrative Experience in the Natural Sciences II.** This sequence of three one-credit courses challenges students to critically examine a scientific topic, problem, or area of conjecture, through a project-based learning experience. By completing a project proposal, a reflective, intellectual autobiography, a research paper, and a final poster presentation, students will investigate an aspect of science and how it affects the world outside of science or how science is affected by the world. This course may be repeated for credit as topic changes. Prerequisite: ITG 468. 1 credit.

**ITG 484. Music and Culture in the Radio Age.** This Integrative Experience Course considers the paths to successful citizenship in a pluralistic society by examining historical events during the creation of commercial radio in the early 20th century. An attempt at cultural mediation undertaken primarily by women and women's clubs unsuccessfully sought to enlist the support of the emerging networks in restricting public exposure to jazz and "hillbilly" music and instead promote what they considered morally superior: concert music in the European tradition, which they called "good music." After studying this movement and the cultural context within which it developed, students will consider the lessons these events may offer for living together in today's increasingly multicultural society. Students will write a reflective essay of between 600 and 1000 words, and a research essay of at least 2500 words on a problem or topic of their choosing that is responsive to the issues raised by the course. This will fulfill three credits of the Integrative Experience Course requirements. Prerequisite: Completion of Connective Experience. Junior or senior standing, or permission of the instructor. 3 credits.

**ITG 487. Critical/Making: Independent Integrative Research.** This course helps students to develop an independent studies project specific to their individual areas of creative + professional interest and see that project through to completion. Students will receive training in strategies for generating original and compelling ideas, advanced interdisciplinary research methods and information literacy skills, and processes for production, revision, and finalization. Meaningful completion of Portfolio Review and Intellectual Autobiography will be part of this process. Prerequisite: COE sequence. 3 credits. [This course is cross-listed with ENG 499]

**ITG 488. Integrative Experience in the Natural Sciences III.** This sequence of three one-credit courses challenges students to critically examine a scientific topic, problem, or area of conjecture, through a project-based learning experience. By completing a project proposal, a reflective, intellectual autobiography, a research paper, and a final poster presentation, students will investigate an aspect of science and how it affects the world outside of science or how science is affected by the world. This course may be repeated for credit as topic changes. Prerequisite: ITG 478. 1 credit.

**ITG 489. Mind and Brain.** This course serves to introduce students to the philosophical mind and the biochemical brain. Using consciousness and its states as our basis, we will delve into questions about the mind/brain distinction and about the nature of human consciousness. This course will advance the student's critical thinking, ethical reasoning, and communications skills. An Intellectual Autobiography reflecting on the student's learning and growth at LVC will be integrated into the course. Prerequisite: Junior or Senior standing, and PSY 110 or PSY 112, and BIO 111/L. 3 credits. [This course is cross-listed with NEU 489]

**ITG 499. Integrative Experience.** The Integrative Experience is the culmination of the common learning experience. This experience allows students to complete an interdisciplinary project and reflect on their learning experiences at LVC Pre or co-requisite: The Connective Experience (COE) and, in particular, the integrative component of the COE must be taken prior to or concurrently with this course. 3 credits.

**IXD 299. Portfolio Defense.** Portfolio: A formal collection of the student's completed work to be presented before the Design, Media and Technology faculty and students as part of the student's formal request to register for an Internship. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisites: DCOM 130, 131, 150, 151, 170, 270, and IXD 450; or permission of the instructor. Corequisites: IXD 451 0 credits. [This course is cross-listed with DCOM 299]

**IXD 333. Experience Design.** The design of experiences can take many forms from riding a ride at an amusement park, to attending a concert, to buying milk or computers or underwear at a brick and mortar store, to finalizing the purchase of a book online. Though varied, all of these experiences share at least one trait—they were designed. The primary approach for the course will be case study analysis, including on-site visits to local parks, museums and other sites. Theories and concepts of experience design will be presented in context while analyzing site designs. Prerequisite: Junior standing. 3 credits. [This course is cross-listed with DCOM 333]

**IXD 351. Prototyping.** This course provides students with an opportunity to explore, concept, and implement the production of prototypes. It will emphasize hands on learning that focuses on producing creative solutions for a variety of design problems. Students will develop functioning prototypes in a variety of media, both virtual and physical. The course will also explore concepts of usability, 3-D design, and functionality. Satisfies the design and UX concentrations. Prerequisite: DCOM 150 and DCOM 151.3 credits. [This course is cross-listed with DCOM 351]

**IXD 370. Programming Lab.** A project-based approach to learning those programming languages used in interaction and experience design (e. g. in connecting objects to the Internet, in prototyping and in controlling microcontrollers). Graded pass/fail. This course may be repeated for credit as topic changes. Prerequisite: DCOM 170, 270, and 271.1 credit.

**IXD 400. Internship.** Internship in Interaction and Experience Design. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-12 credits.

**IXD 410. Capstone - Project Management.** This capstone course teaches the theory and application of planning projects in the field of digital communications. The course covers principles of project management, research, and project strategy. Additionally, topics of professionalism, client interface, modes of communication, and collaborative group theory and practice are explored. 3 credits. [This course is cross-listed with DCOM 410]

**IXD 411. Capstone—Research and Development.** This course simulates the collaborative and interdisciplinary environment of the field of digital communications and emphasizes usability testing in the identification of a problem, in formative testing and prototyping of potential design ideas and summative testing of the final project. The course takes the integrative theory and skills from the areas of concentration and builds upon the theory and application explored in the first Capstone course to develop a multi-disciplinary team of students to deliver an appropriate project. 3 credits. [This course is cross-listed with DCOM 411]

**IXD 430. Experience Design Studio I.** Experience Design Studio I teaches students how to work with clients to design, fabricate, and stage experiences and live events using specific technologies. The thematic-based nature of the course is determined by the specific technologies that form the basis of class projects. Prerequisite: DCOM 333 or IEXD 333. 3 credits.

**IXD 431. Experience Design Studio II.** Experience Design Studio II is a collaborative, hands-on class teaches students how to work with clients to design, prototype, fabricate, and stage desirable, feasible and viable experiences and live events. The nature of the course is thematic, the theme being determined by specific market, genre, or end use. Prerequisite: DCOM 333 or IEXD 333. 3 credits.

**IXD 450. Interaction Design Studio I.** Interaction Design Studio I provides a broad overview of techniques used in physical interaction design. In it, students will work with clients to design, fabricate, and test smart objects or wearables to convert physical action and data into digital information to help facilitate specific, measurable, and beneficial user behaviors or outcomes. The project-based nature of the course is thematic, the theme being determined by specific technologies and means of input chosen by the instructor as a basis for class projects. Prerequisite: DCOM 270, 271, and DCOM/IEXD 351, or permission of the instructor. 3 credits.

**IXD 451. Interaction Design Studio II.** In Interaction Design Studio II, students will work in physical interaction design, using electronics, programming, physical fabrication and digital media to design, fabricate, and test smart objects or wearables that are driven by a user's desires, decisions, and behaviors. The nature of the course is thematic, the theme being determined by specific market, genre, or end use. Prerequisite: DCOM 270, 271, and DCOM/IEXD 351, or permission of the instructor. 3 credits.

**JSTC 300. Critical Issues in Social Justice.** Intensive investigation of global and local expressions of injustice, with particular emphasis on issues such as racial inequality, environmental justice, outsourcing of reproductive labor, the informal economy, and the prison-industrial complex. Topics vary each semester. 3 credits.

**JSTC 320. Service, Activism, and Social Change.** How to become an effective advocate for change? This course will be an experiential learning course in which students will explore both successful and unsuccessful historical social and political movements and plan and implement a service project, social protest, or campaign of their own. Fulfills requirement: Immersive Experience. Recommended co- or pre- requisite: JSTC 300.3 credits.

**JSTC 400. Internship.** Field experience for social justice and civic engagement majors. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisites for Criminal Justice majors: SOC 245, 331, and 333. Prerequisites for Sociology majors: SOC 110, SOC 311; 321 or 331. Seniors only or permission. 1-12 credits.

**JSTC 499. Community, Justice, and Sustainability.** This course helps students to meaningfully synthesize into an independent studies project their interdisciplinary major/minor coursework and their overall academic trajectory over several paths of inquiry pertaining to an area of social justice or U. N. sustainable developmental goals (e. g. peace and justice, gender equality, climate, quality education). This project, whether a research paper or a social activist project, will apply Constellation skills (critical reading, interdisciplinary research methods, information literacy, intercultural competencies, problem solving), entail a significant paper, and a general-public component. Meaningful completion of Portfolio Review and Intellectual Autobiography will be part of this process. Prerequisite: Successful completion of Connective Experience 3 credits.

**LAT 101.Elementary Latin I.** Elementary Latin teaches the basics of Latin grammar, syntax and vocabulary, allowing students to read adapted literature and unadapted literature with appropriate annotations. It will benefit students interested in linguistic studies and those considering advanced work in law, medicine, literature, history, fine arts, archaeology, anthropology, philosophy, religion, and classics. This course does not meet the new "Language and Culture" requirement of the common learning experience. 3 credits.

**LAT 102.Elementary Latin II.** Elementary Latin teaches the basics of Latin grammar, syntax and vocabulary, allowing students to read adapted literature and unadapted literature with appropriate annotations. It also shows how Latin has influenced culture through inscriptions, ritual, and music. It will benefit students interested in linguistic studies and those considering advanced work in law, medicine, literature, history, fine arts, archaeology, anthropology, philosophy, religion, and classics. Fulfills requirement: Language and Culture. Prerequisite: LAT 101 or equivalent. 4 credits.

**LAW 100.Law and Society.** An introduction to law in the United States examine the origin, development and function of law through a multidisciplinary approach that includes the influences of social, political and economic forces on the creation and enforcement of laws. 3 credits.

**LAW 150.Introduction to Law.** This course introduces students to legal practices and judicial systems in the United States and the United Kingdom. 3 credits.

**LAW 215. Law and Government.** This course uses key cases to study important doctrines established by the Supreme Court with respect to the structure and functions of the constitutional system (judicial, legislative and executive power and federalism). There is a particular emphasis on various forms of textual interpretation used by individual justices to apply the Constitution in deciding cases and writing opinions. Prerequisite: Sophomore standing or permission of the instructor. 3 credits. [This course is cross-listed with HIS 215]

**LAW 281.Logical Problems.** This course is a one-credit supplement to PHL-280, to be taken concurrently with or subsequently to PHL-280.Students learn to apply the logical problems and symbols studied in Logic to the Analytical and Logical Reasoning sections of the LSATs. Students practice on various types of questions drawn from previous LSAT exams. Pre- or corequisite: PHL 280.1 credit. [This course is cross-listed with PHL 281]

**LAW 289. Directed Study.** Directed Study in Law This course may be repeated for credit as topic changes. Requires approval from Director of Prelaw Programs and U of London registration 0-3 credits.

**LAW 316. Civil Liberties and Civil Rights.** This course uses key cases to study important doctrines established by the Supreme Court with regard to civil rights and civil liberties. Students will examine the Court's rulings concerning the establishment and free exercise of religion, protection of freedom of speech and of the press, privacy rights (abortion and sexual freedom), the rights of the accused in the criminal justice system, and the law governing racial or sexual discrimination. The course places particular emphasis on various forms of textual interpretation used by individual justices to apply the Constitution in deciding cases and writing opinions. Prerequisites: Sophomore standing or permission of the instructor. LAW 215 recommended. 3 credits. [This course is cross-listed with POL 316]

**LAW 400.Internship.** Field experience in a law environment. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisite: GPA of 2.50 in major and permission of department chair. 1-12 credits.

**LAW 499. Seminar in Law.** This capstone seminar examines the historical and philosophical development of constitutional law in the United States; the seminar emphasizes the dynamic relationship between the law and moral and political philosophy. Prerequisites: Junior or senior standing. POL/PHL 345, DSP 352, DSP 356, or BUS 450.3 credits.

**MAS 099. Presentation Attendance.** The aim of this course is exposure to mathematics beyond the classroom curriculum. The course requirement is attendance at a minimum of six formal presentations on mathematical topics given at conferences, colloquia or symposia at a minimum of two separate events (that is, a conference or event). Presentations should have a title and abstract and may be given by faculty or students; poster sessions do not count. 0 credits.

**MAS 100.Concepts of Mathematics.** A study of a variety of topics in mathematics. Many introduce modern mathematics and most do not appear in the secondary school curriculum. Fulfills requirement: Quantitative Reasoning. 3 credits.

**MAS 102.Pre-Calculus.** A review of precalculus mathematics including algebra and trigonometry. A student may not receive credit for this course after completing MAS 111, MAS 161, or the equivalent. 3 credits.

**MAS 111.Analysis I.** A calculus sequence for department majors and other students desiring a rigorous introduction to elementary calculus. Fulfills requirement: Quantitative Reasoning. Prerequisite: MAS 102 at LVC, or satisfactory score on the math readiness test. This test is administered during New Student Advising Days for incoming students or can be taken by arrangement with the math department (717-867-6080) Co-requisite: MAS 113. 4 credits.

**MAS 112.Analysis II.** Second semester of a calculus sequence for department majors and other students desiring a rigorous introduction to elementary calculus. Fulfills requirement: Quantitative Reasoning. Prerequisite: MAS 111; Corequisite: MAS 114. 4 credits.

**MAS 113. Introduction to Mathematical Thinking I.** An introduction to college mathematics for potential mathematical science majors. Corequisite: MAS 111.1 credit.

**MAS 114. Introduction to Mathematical Thinking II.** Second semester. Introduction to college mathematics for potential mathematical science majors. Corequisite: MAS 112.1 credit.

**MAS 150.Finite Mathematics.** Introduction to mathematical techniques used in quantitative analysis in business and economics. Topics include sets, linear relations, matrices, linear programming, probability and interest. Fulfills requirement: Quantitative Reasoning. 3 credits.

**MAS 161.Calculus I.** A calculus sequence covering functions, limits, differentiation, integration and applications. Fulfills requirement: Quantitative Reasoning. Prerequisite: MAS 102 at LVC, or satisfactory score on the math readiness test. This test is administered during New Student Advising Days for incoming students or can be taken by arrangement with the math department (717-867-6080). 3 credits.

**MAS 162.Calculus II.** Second semester of a calculus sequence covering functions, limits, differentiation, integration and infinite series. Fulfills requirement: Quantitative Reasoning. Prerequisite: MAS 161.3 credits.

**MAS 170.Elementary Statistics.** An introduction to elementary descriptive and inferential statistics with emphasis on conceptual understanding. Fulfills requirement: Quantitative Reasoning. A student may not receive credit for MAS 170 after completing MAS 372.A student may not receive credit for both MAS 170 and MAS 270.3 credits.

**MAS 202.Foundations of Mathematics.** Introduction to logic, set theory and proof techniques. Prerequisites: MAS 222, ASC 281, or FIN 283. 3 credits.

**MAS 222.Linear Algebra.** An introduction to linear algebra including systems of equations, vectors spaces and linear transformations. Prerequisites: MAS 112 or MAS 261.3 credits.

**MAS 261.Calculus III.** Multivariate calculus including partial differentiation, multiple integration, vector fields and vector functions. Prerequisites: MAS 112 or MAS 162.3 credits.

**MAS 266. Differential Equations.** An introduction to ordinary differential equations. Prerequisites: MAS 112 or MAS 162.3 credits.

**MAS 270.Intermediate Statistics.** A more advanced version of MAS 170 intended for students with some calculus background. Fulfills requirement: Quantitative Reasoning. Prerequisite: MAS 111 or MAS 161.A student may not receive credit for both MAS 170 and MAS 270.3 credits.

**MAS 311.Real Analysis.** Convergent and divergent series, limits, continuity, differentiability and integrability; Fourier series. Prerequisites: MAS 202 and MAS 222.3 credits.

**MAS 323. Introduction to Modern Algebra and Geometry.** This course is an introduction to group theory and to Euclidean and non-Euclidean geometry. Topics are unified through the central concept of a group of transformations acting on a geometric space. Geometry is used to motivate, develop, and illustrate the algebraic theory. Algebra is used as the main tool for the development of geometry. Prerequisites: MAS 202.3 credits.

**MAS 371.Statistical Inference.** An introduction to the mathematical foundations of probability and statistics, with a focus on estimation, sampling distributions, and hypothesis testing. This course is designed to meet the Society of Actuaries (SOA) standards for Validation through Educational Experience (VEE) in the area of mathematical statistics. Prerequisites: MAS 202; and ASC 281, FIN 283 or MAS 270.3 credits.

**MAS 372.Statistical Modeling.** Study of various modeling techniques including regression, decision trees, unsupervised learning, and time series methods with implementation in the computer language R. The course also provides an introduction to generalized linear models and generalized additive models. MAS 372 covers the material on SOA exam SRM - Statistics for Risk Modeling. Prerequisite: MAS 371.3 credits.

**MAS 390.Special Topics.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite varies depending on topic. Announced at the time of registration. 3 credits.

**MAS 500.Independent Study.** Independent Study in Mathematical Science. This course may be repeated for credit as topic changes. 1-3 credits.

**MBS 371.Introduction to the Music Business.** This course examines how the music business operates, delving into a wide range of issues and areas, such as publishing, record labels, retail, distribution, market research, agents and managers, and current issues in the industry. 3 credits.

**MBS 372.Music Copyright, Contracts and Cash.** An in-depth examination of publishing and recording contracts, music copyright law, and music licensing. 3 credits.

**MBS 373. Music Industry Entrepreneurship.** This course for music business majors explores entrepreneurship in the music industry. The class revolves around the creation of a practical music business and an accompanying detailed business plan that is submitted to a participating financial institution for review. Student teams also engage with actual music businesses to provide marketing, distribution, research, and other services. The class discusses techniques and practices of management, operations, marketing, and other skills needed to run a successful music business. 3 credits.

**MBS 400.Internship.** Internship in Music Business. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisites: Completion of all program requirements and permission of the instructor. 3-12 credits.

**MED 110.Foundations of Music Education.** This course is a study of foundational matters that shore up an understanding of the music education process in schools, framing philosophical issues cross-culturally and comparatively, so that prospective teachers might grasp a broader and more varied view of music in education across time and place. It will include a balance of the strong traditions of school music programs with the program transitions that are unfolding as society expands into technology and mediates popular culture. One component of the course will be a weekly field experience (two hours per week, minimum, or a total of 30 hours in the semester) to orient students into practical matters of curriculum and instruction linked to philosophical and theoretical issues. Students must have all required clearances and TB shot form on file in the music office and in the registrar office. 3 credits.

**MED 223. Brass Techniques.** A study of the brass family. Emphasis on pedagogical techniques. Mixed brass ensemble experience. 2 credits.

**MED 227. Percussion Techniques.** A study of the percussion family. 1 credit.

**MED 280.Field Practicum in Music Education.** Optional supervised field experiences in appropriate settings. May be repeated for credit. Prerequisite: MED 110 and permission of instructor. 1-3 credits.

**MED 330. Woodwind Techniques.** A study of the woodwind family. 2 credits.

**MED 331. String Techniques.** A study of the string family. 2 credits.

**MED 333. Methods and Materials, General Music: Elementary.** The study and application of general music practices and principals for teaching at the elementary school level. Emphasis is placed on the development of teaching for musical understanding through hands on constructivist approaches. Lesson design, assessment strategies and engagement with current trends in music teaching and learning will enable student to demonstrate a strong pedagogical approach as music educators. Weekly field experience totaling 30 semester hours and three practicum lessons are required. 3 credits.

**MED 334. Choral Literature and Methods.** A study of literature, materials and approaches appropriate for choral and general music classes in grades 5-12. 3 credits.

**MED 335. Instrumental Literature and Methods.** A study of literature, materials, philosophy and methods applicable to the teaching of instrumental ensembles (including marching band) from elementary through high school levels. 3 credits.

**MED 337. Music Teaching and Learning I.** This course is designed to introduce theories of learning with application to music education. Topics include stage and phase theories, theories of musical play and socialization, constructivist theory of meaning making, social learning and reinforcement theories, learning style theories, and theories/strategies of instruction. One component of the course is a weekly field experience in the local schools (two hours per week, minimum, or a total of 30 hours in the semester) to orient students into practical matters of music instruction and curriculum linked to principles of learning. Current and emerging education technology will be infused in the course. 2 credits.

**MED 437. Music Teaching and Learning II.** This course is designed for music teaching and learning in the secondary general music classroom. Topics include materials and techniques for instructional design in contemporary practices with modern band instruments; computer-assisted instruction and emerging technologies; cultural diversity and professional development. One component of the course will be weekly field experiences (two hours per week, minimum in local schools). 2 credits.

**MED 441. Student Teaching: Instrumental.** Music education majors spend a semester in the music department of a school district under the supervision of cooperating teachers. Fulfills requirement: Immersive Experience. 6 credits.

**MED 442. Student Teaching: Vocal.** Same as MED 441. Fulfills requirement: Immersive Experience. 6 credits.

**MED 500. Independent Study.** Independent Study in Music Education. This course may be repeated for credit as topic changes. 1-3 credits.

**MSC 087. Student Recital.** Students perform a short solo selection (less than 10 minutes) on an "LVC Students in Recital" program. Fulfills a graduation requirement for all music majors. Graded pass/fail. This course may be repeated for credit as topic changes. 0 credits.

**MSC 099. Recital Attendance.** Designed for music majors and minors and graded on a satisfactory/unsatisfactory basis. Music core course. Graded pass/fail. May be repeated. 0 credits.

**MSC 100. Experience Music.** What makes music "good"? Why does certain music stand the test of time? Have you ever wondered why a certain kind of music appeals to you? Instead of letting Pandora do all the work, this class will train students to analyze music using the knowledge of the different elements: timbre, melody, harmony, rhythm/beat/meter, form, and the link between words and music. We will discern how these elements in genres from classical to rock music gives us the emotional experience we feel when we listen. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**MSC 101. Fundamentals of Music.** An introduction to the rudiments of music: notation, key signatures, theory, aural theory and so forth. 3 credits.

**MSC 111. Class Guitar for Beginners.** Student provides his or her own instrument. May be repeated for credit. 1 credit.

**MSC 115. Music Theory I.** A study of the rudiments of music and their notation. Harmonization of melodies and basses with fundamental triads. Aspects of form and analysis. Music core course. Prerequisite: audition for admission or permission of the instructor. 2 credits.

**MSC 116. Music Theory II.** A study of diatonic tonal harmony, including all triads and seventh chords, nonharmonic material and elementary modulation. Aspects of form and analysis. Music core course. Prerequisite: MSC 115 or permission of the instructor. 2 credits.

**MSC 117. Aural Skills I.** The singing and aural recognition of music fundamentals, with emphasis on tonal pitch patterns and rhythmic patterns, and including intervals, scales, and triads. Music core course. Prerequisite: audition for admission or permission of the instructor. 2 credits.

**MSC 118. Aural Skills II.** A continuation of MSC 117, with emphasis on singing and aural recognition of more complex pitch and rhythmic relationships, common diatonic harmonic patterns and clef reading. Music core course. Prerequisite: MSC 117 or permission of the instructor. 2 credits.

**MSC 121. Music Theory Lab.** Intensive study of fundamentals including key signatures, scales, triads, seventh chords, and intervals. Corequisite: MSC 115. 1 credit.

**MSC 122. Aural Skills Lab.** Intensive review of musicianship skills and concepts learned in MSC-117. Corequisite: MSC 117. 1 credit.

**MSC 130. Music Composition Workshop.** A study of basic composition techniques, including composing in standard forms (theme and variation, binary, ternary) for acoustic instruments, with emphasis on music notation and aspects of analysis. Students compose their own works and participate in the performance during class of other students' works. This course may be repeated for credit as topic changes. Prerequisite: MSC-116. 1 credit.

**MSC 150. Class Piano Instruction I.** First course in the sequence designed for music majors with minimal piano skills in preparing for piano proficiency. 1 credit.

**MSC 151. Class Piano Instruction II.** Second course in the sequence designed for music majors in preparing for piano proficiency. Prerequisite: MSC 150 with a minimum of C- or better, or permission of the instructor. 1 credit.

**MSC 160. Class Voice Instruction.** Designed for music majors with minimal vocal skills. Preparation for department voice proficiency requirements. 1 credit.

**MSC 201. The Roots of American Music.** One of the central concerns of this course is the ability of music to represent American identity. Of particular interest are the historic contributions of minority peoples, particularly African Americans, who have infused a variety of global music influences in the rich diversity of musical styles in the United States. This course considers the importance of geographic and ethnic origins of a particular musical style as well as the consequences of a market-driven music industry, which historically has privileged some groups over others. Fulfills requirement: Intercultural Competence. 3 credits.

**MSC 202. World Musics.** A general introduction to musical styles, compositional practices, and aesthetics of specific people groups within the Americas, Asia, and Africa. It discusses traditional, popular, and art music styles, and presents music intimately tied to value systems and social practice. Fulfills requirement: Intercultural Competence. 3 credits.

**MSC 205. Song Interpretation: Analyzing Dramatic Context.** This is a performance class where singers are taught various methods and techniques used for connecting to an interpreting dramatic context within a song. A piano accompanist is provided. A certain amount of singing and musical skills are expected as these will be secondary focuses within the class structure. Prerequisite: MUI 121, MUI 221, or permission of the instructor. 2 credits.

**MSC 206. Milestones in Music Recording.** An in depth analysis of the seminal recordings of the music industry. Milestone records representing the art of recorded music will be studied from conception to marketing. Examples of such recordings include Sgt. Pepper, Dark Side of the Moon, OK Computer, Band on the Run, and more. The goal is to discover why and how the records studied have become the high art of the music industry. Fulfills requirement: Intercultural Competence. 3 credits.

**MSC 215. Music Theory III.** A study of chromatic tonal harmony, including secondary dominants, augmented sixth chords, tertian extensions, altered chords and advanced modulation. Aspects of form and analysis. Music core course. Prerequisite: MSC 116 or permission of the instructor. 2 credits.

**MSC 216. Music Theory IV.** A study of 20th-century compositional techniques, including modal and whole-tone materials, quartal harmony, polychords, atonality, serialism and various rhythmic and metric procedures. Aspects of form and analysis. Prerequisite: MSC 215 or permission of the instructor. 2 credits.

**MSC 217. Aural Skills III.** A continuation of MSC 118, with emphasis on chromatic harmony, including singing and aural recognition of tonicizations, modulations, and more complex rhythmic relationships. Music core course. Prerequisite: MSC 118 or permission of the instructor. 2 credits.

**MSC 218. Jazz Theory.** A study of jazz theory, including notation, extended chords, improvisation and practice. Prerequisites: MSC 115, MSC 116 and MSC 215. 2 credits.

**MSC 233. Diction.** An introduction to the pronunciation of singer's English, German, French, Italian and Latin, utilizing the International Phonetic Alphabet. Required of voice concentration majors, the course is open to other students with permission of the instructor. 2 credits.

**MSC 241. Introduction to Music History.** This course reviews a variety of musical traditions from non-Western, popular, and Western art music repertoires. Students will apply basic methods of music history to a diverse repertory of musical styles. Fulfills requirement: Intercultural Competence. Prerequisite: MSC 101, 115, or permission of the instructor. 3 credits.

**MSC 242. History of Western Art Music, 1730-1950.** A survey course in the history of Western music with emphasis on stylistic developments and illustrative musical examples. Prerequisite: MSC 101, MSC 115, or permission of the instructor. 3 credits.

**MSC 243. Musical Theater History Context.** A survey course of musical theater history from the late 18th century through the present. The course addresses innovations, trends, styles, famous composers and writers along with foundational political, social and cultural influences. 2 credits.

**MSC 246. Principles of Conducting.** Principles of conducting and baton technique. Students conduct ensembles derived from class personnel. Music core course. 2 credits.

**MSC 250. Modern Band Keyboard Techniques.** This course provides students a hands-on opportunity to learn contemporary keyboard and piano methods. Building upon basic keyboard technique and music theory, students will develop keyboard skills and concepts and apply them in the areas of music styles such as pop, rock, jazz, blues, contemporary worship and more. The experience will capitalize on the group classroom set-up to give students an opportunity to use the keyboard (piano, organ, and synth) in a variety of settings including piano accompaniment, comping and improvising in a band, and keyboard use in recording and studio environments. Prerequisite: Take MSC-151, or permission of the instructor. 1 credit.

**MSC 252. Class Piano Instruction III.** Third course in the sequence designed for music majors in preparing for piano proficiency. Prerequisite: MSC 151 with a minimum of C- or better, or permission of the instructor. 1 credit.

**MSC 253. Class Piano Instruction IV.** Fourth course in the sequence designed for music majors in preparing for piano proficiency. Prerequisite: MSC 252 with a minimum of C- or better, or permission of the instructor. 1 credit.

**MSC 305. Musical Theater Repertoire.** This is a musical theater based, performance class where singers build on skills learned in MSC 205. The pace is faster than MSC 205 and helps students to identify dramatic context more quickly, while also exposing them to a plethora of composers and repertoire. A piano accompanist is provided. A certain amount of singing and musical skills are expected, as these are secondary focuses. Prerequisite: Two semesters of MUI 121 or MUI 221; MSC 205 or permission of the instructor. 3 credits.

**MSC 306. Piano Literature.** A survey of the development of the piano and its literature with emphasis on piano methods books and related materials. 2 credits.

**MSC 315. Counterpoint.** Introductory work in strict counterpoint through three- and four-part work in all the species. 2 credits.

**MSC 316. Keyboard Harmony.** Score reading and the realization of figured bass at the keyboard, transposition and improvisation. Prerequisite: The successful completion of a piano proficiency jury is required for admission to the course. 2 credits.

**MSC 326. Vocal Literature.** A survey of solo vocal literature with emphasis on teaching repertoire. Extensive listening is required. Students may have opportunities to perform the works studied. 2 credits.

**MSC 327. Vocal Pedagogy.** This course prepares the advanced voice student to teach private lessons at the secondary school level. Students are expected to develop vocal exercise procedures, become familiar with suitable teaching repertoire and apply teaching procedures in a laboratory situation. Selected writings in vocal pedagogy and voice therapy will be studied. 2 credits.

**MSC 329. Advanced Form and Analysis.** An advanced course in analysis, focusing on the methodologies and concepts of music design originated by the Austrian theorist Heinrich Schenker. Emphasis is placed on the appropriate use of symbols and terminology in the reading and construction of graphs of complete tonal compositions. Prerequisite: MSC 216 or permission of instructor. 3 credits.

**MSC 330. Half Music Recital.** The Half Recital is a program that is shared by two performers, each of whom performs a maximum of 25 minutes of music. Each performer may have assistance through ensemble with other performers. Fulfills requirement: Immersive Experience. Prerequisite: Declared major in the music department, junior standing, and approval of the music department. 0 credits.

**MSC 343. 20th Century Art Music.** An advanced course in music history. Beginning with late-19th-century musical developments, the course continues chronologically through the 20th century. Designed for music majors and interested non-majors who read music well. Fulfills requirement: Critical Thinking through Writing. Prerequisite: MSC 115 or permission of the instructor. 3 credits.

**MSC 345. Advanced Instrumental Conducting.** Emphasis on practical work with instrumental groups. Rehearsal techniques are applied through individual experience. Prerequisite: MSC 246 or permission of the instructor. 2 credits.

**MSC 347. Advanced Choral Conducting.** Emphasis is on advanced technique with and without baton, score preparation, interpretation and pedagogy relating to choral organizations. Prerequisite: MSC 246 or permission of the instructor. 2 credits.

**MSC 351. Organ Literature.** A historical survey of representative organ literature from earliest times to the present day. 2 credits.

**MSC 352. Organ Pedagogy.** Designed with a practical focus, this course surveys various methods of organ teaching. Laboratory teaching and selection of appropriate technical materials for all levels are included. 2 credits.

**MSC 403. Instrumental Pedagogy.** A survey of teaching materials that relate to the student's performance area. Students may be expected to apply teaching procedures in a laboratory situation. May be repeated for credit as topic changes. 2 credits.

**MSC 405. Instrumental Literature.** A survey of literature (solo and chamber) that relate to the student's performance area. May be repeated for credit as topic changes. 2 credits.

**MSC 406. Piano Pedagogy.** A practical course that explores fundamental principles necessary to be an effective piano teacher. Subjects include practice techniques, memorization and the selection of appropriate technical materials for both beginners and advanced students. Laboratory teaching may be required of the student. 2 credits.

**MSC 411. Capstone Symposium in Music I.** During the first term of the Capstone Symposium, students will work with the instructor to develop a long-term plan for the project and complete a proposal that typically includes a clear description of needed research materials, how the project will work in conjunction with the student's individual lessons (MUJ courses) already in progress, and the form in which the final capstone project will be presented. Students will also be expected to begin a reflection component that will carry through the entire experience. Prerequisite: One 300 or 400 level MSC course, or permission of the instructor. 1 credit. [This course is cross-listed with MSC 412 MSC 413]

**MSC 412. Capstone Symposium in Music II.** During the second term of the Capstone Symposium, students will focus on research and a detailed outline of the project. Prerequisite: One 300 or 400 level MSC course, or permission of the instructor. 1 credit. [This course is cross-listed with MSC 411 MSC 413]

**MSC 413. Capstone Symposium in Music III.** During the third term of the Capstone Symposium, students will complete all components of the project, including final drafts of written work, the completion of a lecture presentation, or the completion of another project similar in score and depth. The students in the final phase of the sequence will present their projects to the class, as well as mentor students in the 1st and 2nd semesters of the sequence. Prerequisite: One 300 or 400 level MSC course, or permission of the instructor. 1 credit. [This course is cross-listed with MSC 411 MSC 412]

**MSC 416. Orchestration.** A study of instrumentation and the devices and techniques for scoring transcriptions, arrangements and solos for orchestra and band, with special emphasis on practical scoring for mixed ensembles as they occur in public schools. Laboratory analysis and performance. Scoring of original works. 2 credits.

**MSC 422. Church Music Methods and Administration.** A course that acquaints students with the church music program. Includes the development of a choir program, methods and techniques of rehearsal, budget preparation, and committee and pastoral relationships. 3 credits.

**MSC 430. Full Music Recital.** The Full Recital is a solo recital in which the performer is the major participant but may have assistance through ensemble with other performers. The performer is responsible for a one-hour program (including intermission). Fulfills requirement: Immersive Experience. Prerequisite: Declared major in the music department, senior standing, and approval of the music department. 0 credits.

**MSC 450. Accompanying.** Under the guidance of piano instructor, the piano concentration student prepares accompaniments for recital performance. One credit per semester is given for one solo recital or two half recitals. A maximum of two credits, usually distributed over the last three years, may be earned. 1-2 credits.

**MSC 500. Independent Study.** Independent Study in Music. This course may be repeated for credit as topic changes. 1-3 credits.

**MUE 101. Marching Band.** The principal band experience during the fall semester open to all students based on prior experience. Performs for home football games and selected invitationals. Practical lab experience for music education majors. Satisfies large ensemble requirement. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). 1 credit.

**MUE 102. Symphonic Band.** The principal band experience during the spring semester, open to all students by audition. The Symphonic Band performs original literature and arrangements of standard repertoire. Satisfies large ensemble requirement. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). 1 credit.

**MUE 103. Symphony Orchestra.** Various symphonic literature is studied and performed. In the second semester the orchestra accompanies soloists in a concerto-aria concert and on occasion combines with choral organizations for the performance of a major work. Open to all students by audition. Satisfies large ensemble requirement. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). 1 credit.

**MUE 104. Concert Choir.** Open to all students by audition, the Concert Choir performs all types of choral literature. In addition to local concerts, the Choir tours annually. Satisfies large ensemble requirement. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). Prerequisite: audition required. Contact the instructor for more information. 1 credit.

**MUE 106. College Choir.** Open to all students. The College Choir performs all types of choral literature. Satisfies large ensemble requirement. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). 1 credit.

**MUE 209. Chamber Choir.** Open to all students by audition, the Chamber Choir performs chamber vocal literature from madrigals to vocal jazz. May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). Prerequisite: audition required. Contact the instructor for more information. 1/2 credit.

**MUE 210. Clarinet Choir.** May be repeated for credit (up to 12 credits of music ensembles may be counted toward the degree). 1/2 credit.

**MUE 211. Flute Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 212. Saxophone Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 213. Woodwind Quintet.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 214. Low Brass Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 215. Trumpet Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 216. Percussion Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 220. String Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 224. Jazz Workshop Ensemble.** The Jazz Workshop Ensemble is an introductory performing group open to all students that focuses on learning the fundamentals of playing in jazz-related styles. Attention is given specifically to learning the jazz vocabulary, phrasing, improvisation, and the intricacies of group playing. 1/2 credit.

**MUE 225. Valley Jazz Orchestra.** Jazz Band ensemble. This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 226. Small Jazz Ensemble.** Small Jazz Ensemble. This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 230. Guitar Ensemble.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 231. Brass Quintet.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 235. Handbell Choir.** This course may be repeated for credit as topic changes. 1/2 credit.

**MUE 236. New Music Ensemble.** A chamber ensemble that performs works of 20th- and 21st-century composers with a focus on experimental music. This course may be repeated for credit as topic changes. 1/2 credit.

**MUI 110. Individual Instruction: Piano.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 111. Individual Instruction: Organ.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 121. Individual Instruction: Voice.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 130. Individual Instruction: Trumpet.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 131. Individual Instruction: French Horn.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 132. Individual Instruction: Trombone.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 133. Individual Instruction: Euphonium.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.

**MUI 134. Individual Instruction: Tuba.** Additional fees apply. May be repeated for credit. Restricted to music majors & minors or by permission of the instructor. 1 credit.



**MUI 244. Individual Instruction: Saxophone.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 250. Individual Instruction: Violin.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 251. Individual Instruction: Viola.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 252. Individual Instruction: Cello.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 253. Individual Instruction: Bass.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 254. Individual Instruction: Guitar.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 255. Individual Instruction: Percussion.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 256. Individual Instruction: Drum Set.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 260. Individual Instruction: Jazz Studies Guitar.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 261. Individual Instruction: Jazz Studies Percussion.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 262. Individual Instruction: Jazz Studies Piano.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 263. Individual Instruction: Jazz Studies Woodwind/Brass.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 264. Individual Instruction: Jazz Studies Bass.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 270. Individual Instruction: Theory.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 271. Individual Instruction: Composition.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**MUI 272. Individual Instruction: Jazz Composition.** Additional fees apply. May be repeated for credit. Enrollment restricted to music majors. 2 credits.

**NEU 215. Introduction to Behavioral Genetics.** This course will take an interdisciplinary approach to examining variations in genotype and their behavioral correlates. We will study the biological principles of genetics and how they relate to personality traits, diseases, and disorders. Students will learn laboratory techniques for analyzing genetic variation and how each variation relates to behavioral predispositions. Prerequisite: PSY 111/L, BIO 111/L, and BIO 112/L. 4 credits.

**NEU 231. Neurobiology.** This course takes an in-depth look at the biological and physiological processes that give rise to complexity of the nervous system and ultimately allow for complex function. It examines the biology of vertebrate nervous systems, with particular emphasis on the human nervous system. Topics include cellular and molecular biology of the neuron, neuroanatomy, neurophysiology, nervous system development and plasticity, mechanisms of learning and memory, and sensory and motor systems. Prerequisite: a C- (1.67) average in BIO 111/L and BIO 112/L. Corequisite: NEU 231L. 4 credits. [This course is cross-listed with BIO 231]

**NEU 232. Neuroanatomy of Disease.** This course will examine, in depth, the neuroanatomical bases for selected disorders of the human central nervous system. The topics covered will include Parkinson's disease, Alzheimer's disease, Huntington's disease and stroke. Current trends in prevention and treatment of the disorders will also be studied. Prerequisite: BIO 111/L, BIO 112/L, and PSY 111/L. 3 credits. [This course is cross-listed with BIO 232]

**NEU 278. Brain and Behavior.** This course provides a basic introduction to the structures and functions of the nervous system, while exploring the methods and theories that allow us to understand normal and abnormal behavior. Students will learn the essentials of neuroanatomy and neurophysiology, including a basic introduction to neurons, brain organization, and functional specialization of brain structures related to behaviors such as learning and memory, reward, sexuality, language, and sensory/motor systems. Prerequisite: PSY 111 or 125, or junior-level Psychology major or minor. 3 credits. [This course is cross-listed with PSY 278]

**NEU 285. Introduction to Psychopharmacology.** This course surveys the most commonly used substances to treat mental disorders, such as anti-anxiety, antidepressant, antipsychotic, mood-stabilizer, psychostimulant, and cognitive enhancer medications. The course also discusses the brain and its most common neurotransmitters, how transmitting neurons send and receive electrochemical information, the pharmacokinetics (metabolism and elimination) and pharmacodynamics (absorption, distribution, and effects) of each drug as well as the action sites, side effects, and mechanisms of each drug. Prerequisite: PSY 111/L or 112, or junior-level Psychology major or minor. 3 credits.

**NEU 291. Special Topics in Theoretical Neuroscience.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Corequisite: NEU 291L. 4 credits.

**NEU 292. Special Topics in Applied Neuroscience.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Corequisite: NEU 292L. 4 credits.

**NEU 360. Analytic Seminar: Behavioral Neuroscience.** This course will examine the role of biological mechanisms in influencing human experiences such as perception, learning, memory, cognition, and motivation. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312.4 credits. [This course is cross-listed with PSY 360]

**NEU 367. Analytic Seminar: Behavioral Genetics.** This course will take an interdisciplinary approach to examining variations in genotype and their behavioral correlates. We will study the biological principles of genetics and how they relate to personality traits, diseases, and disorders. The

nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits. [This course is cross-listed with PSY 367]

**NEU 489. Mind and Brain.** This course serves to introduce students to the philosophical mind and the biochemical brain. Using consciousness and its states as our basis, we will delve into questions about the mind/brain distinction and about the nature of human consciousness. This course will advance the student's critical thinking, ethical reasoning, and communications skills. An Intellectual Autobiography reflecting on the student's learning and growth at LVC will be integrated into the course. Prerequisite: Junior or senior standing, and PSY 110 or PSY 112, and BIO 111/L. Restricted to NEU majors. 3 credits. [This course is cross-listed with ITG 489]

**NEU 499. Advanced Seminar in Neuroscience.** Readings, discussions, and reports on selected topics in neuroscience. This course may be repeated for credit as topic changes. Prerequisite: Permission of the instructor. 1 credit.

**NEU 500.Independent Study.** Independent Study in Neuroscience. This course may be repeated for credit as topic changes. 1-3 credits.

**PHL 210.Ethics for Social Justice.** An inquiry into the central problems of values applied to human conduct, with an examination of the responses of major ethical theories to those problems. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**PHL 240.Encountering World Philosophies.** A study of diverse perspectives on the basic questions of philosophical inquiry: What is the nature of reality? What is the nature of the self? What is the nature of knowledge? By what standards do we evaluate truth claims? This course examines these questions from perspectives outside the classical philosophical approach rooted in the Mediterranean. Fulfills requirement: Intercultural Competence. 3 credits.

**PHL 280.Logic.** Logic is the study of valid arguments, arguments whose conclusions follow from their premises. The course teaches the translation of arguments into symbolic logic so that their structure and validity become apparent. It also teaches how to construct proofs of valid arguments and refutations of invalid ones. 3 credits.

**PHL 281.Logical Problems.** This course is a one-credit supplement to PHL-280, to be taken concurrently with or subsequently to PHL-280.Students learn to apply the logical problems and symbols studied in Logic to the Analytical and Logical Reasoning sections of the LSATs. Students practice on various types of questions drawn from previous LSAT exams. Pre- or corequisite: PHL 280.1 credit. [This course is cross-listed with LAW 281]

**PHL 285. Independent Reading Forum.** For this course students will, in consultation with a member of the faculty, develop a reading list to explore critical themes, significant theorists, and/or a key thinker or school of thought in religion or philosophy. The work of the course is in part the independent reading of this list and in part participation in a forum of all students enrolled in this course with faculty from the department, focused on sharing what each student learns in their independent readings. This course may be repeated for credit as topic changes. 1 credit.

**PHL 299. Gastrophilosophy.** This study abroad course examines Italian food culture philosophically through the conceptual lenses of time, place, and identity. Studying abroad in Italy provides students with a chance to rethink their eating practices in one of the richest gastronomic traditions on the planet by examining the food culture, the food systems, and the food aesthetics of Italy. This course begins from the simple premise that thinking should inform eating, and eating should inform thinking. The encounter with Italian culture allows the student to view what has become habitual and mundane from a new cultural perspective through readings, field trips and hands-on activities. This course will utilize the Italian setting as a counter-point to the cultural framework of the United States and as an opportunity to develop two essential goals of philosophy: critical self-reflections and the quest for the good life. Fulfills requirement: Intercultural Competence. 3 credits.

**PHL 311.Interdisciplinary Seminar in Philosophy.** The course focuses on the issues surrounding one central topic in the study of Philosophy. Students will take an interdisciplinary and problem-oriented approach to such topics as Genocide, Postmodern Philosophy and Theology, Madness and Happiness. This course may be repeated for credit as topic changes. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**PHL 345. Philosophical Foundations of Politics.** Students in this course study the development of Western political thought from Classical Greece to modern times, examining the conceptual evolution of citizenship, civic obligation, and the nature of justice and exploring the connection between moral and positive law in the western tradition. Prerequisite: Junior or senior standing. 3 credits. [This course is cross-listed with POL 345]

**PHL 401.Senior Presentation.** This course requires students to develop a presentation for their peers and faculty in the department integrating revelations garnered during their coursework. The students will prepare and give a formal presentation of their "one big idea" in a TED styled talk to be digitally archived. This course may be repeated for credit as topic changes. Prerequisite: Junior or senior standing. 1 credit.

**PHL 417. Seminar in Law.** This capstone seminar examines the historical and philosophical development of constitutional law in the United States; the seminar emphasizes the dynamic relationship between the law and moral and political philosophy. Prerequisites: Junior or senior standing. POL 345/PHL 345, DSP 352, DSP 356 or BUS 450.3 credits. [This course is cross-listed with LAW 499]

**PHY 103. General College Physics I.** This course provides an algebra-based introduction to the fundamental concepts and laws of classical mechanics and thermodynamics, with laboratory work in each area. The mechanics unit covers translational motion, Newton's laws, energy, momentum, rotational motion, statics, fluids, oscillations, waves, and sound. Fulfills requirement: Quantitative Reasoning. Corequisite: PHY 103L. 4 credits.

**PHY 104. General College Physics II.** Second semester of General College Physics. This course provides an algebra-based introduction to the fundamental concepts and laws of electricity, magnetism, optics, and atomic and nuclear physics, with laboratory work in each area. Fulfills requirement: Quantitative Reasoning. Prerequisite: PHY 103 or equivalent. Corequisite: PHY 104L. 4 credits.

**PHY 111.Principles of Physics I.** This course provides a rigorous, calculus-based introduction to topics in classical mechanics such as translational motion, Newton's laws, energy, momentum, rotational motion, statics, fluids, oscillations, waves, and sound. In addition to the lecture component,

weekly laboratory work will be conducted in each area. Fulfills requirement: Quantitative Reasoning. Prerequisite or corequisite: MAS 111 or 161. Corequisite: PHY 111L. 4 credits.

**PHY 112. Principles of Physics II.** Second semester of Principles of Physics. This course provides a rigorous, calculus-based introduction to the concepts and laws encountered in the following branches of physics: thermodynamics, electricity and magnetism, and optics. In addition to the lecture component, weekly laboratory work will be conducted in each area. Fulfills requirement: Quantitative Reasoning. Prerequisite: PHY 111/L and MAS 111 or 161. Corequisite: PHY 112L. 4 credits.

**PHY 205. Physics of Sound.** An investigation into the principles and applications of physics as relates to sound and audio. Sound waves, room acoustics and design, musical instrument sound propagation, harmonics and overtones, electromagnetic induction, and other related topics will be explored. 3 credits.

**PHY 210. Introduction to Computational Physics.** An introduction to the approximate numerical solution of physical problems with computers. The course focuses on problems from mechanics, electromagnetics, and quantum mechanics that are not analytically solvable. Topics include realistic projectile motion, planetary motion, and electromagnetic fields produced by charge and current distributions. Prerequisites: PHY 103 or 111, and MAS 111 or 161. 3 credits.

**PHY 211. Atomic and Nuclear Physics.** An introduction to modern physics, including special relativity, the foundation of atomic physics, quantum theory of radiation, the atomic nucleus, radioactivity and nuclear reactions, with laboratory work in each area. Prerequisite: PHY 104/L or 112/L, MAS 111 or 161 or permission. Corequisite: PHY 211L. 4 credits.

**PHY 212. Introduction to Electronics.** The physics of electrons and electronic devices, including diodes, transistors, power supplies, amplifiers, oscillators, switching circuits, and integrated circuits, with laboratory work in each area. Prerequisite: PHY 104/L or 112/L, or permission. Corequisite: PHY 212L. 4 credits.

**PHY 302. Optics.** A study of the physics of light, with emphasis on the mathematics of wave motion and the interference, diffraction and polarization of electromagnetic waves. The course also includes geometric optics with applications to thick lens, lens systems and fiber optics. Prerequisites: PHY 112 and either MAS 112 or MAS 162. 3 credits.

**PHY 304. Thermodynamics.** A study of the physics of heat, with emphasis on the first and second laws of thermodynamics. Applications of thermodynamics to physics and engineering are included. Elements of kinetic theory and statistical physics are developed. Prerequisites: PHY 112 and either MAS 112 or MAS 162. 3 credits.

**PHY 311. Analytical Mechanics I.** A rigorous study of classical mechanics, including the motion of a single particle, the motion of a system of particles and the motion of a rigid body. Damped and forced harmonic motion, the central force problem, the Euler description of rigid body motion and the Lagrange generalization of Newtonian mechanics are among the topics treated. Prerequisites: PHY 111 and MAS 266. 3 credits.

**PHY 312. Analytical Mechanics II.** Second semester of a rigorous study of classical mechanics, including the motion of a single particle, the motion of a system of particles and the motion of a rigid body. Damped and forced harmonic motion, the central force problem, the Euler description of rigid body motion and the Lagrange generalization of Newtonian mechanics are among the topics treated. Prerequisites: PHY 111/L and MAS 266. 3 credits.

**PHY 321. Electricity and Magnetism I.** Theory of the basic phenomena of electromagnetism together with the application of fundamental principles of the solving of problems. The electric and magnetic properties of matter, direct current circuits, alternating current circuits, the Maxwell field equations and the propagation of electromagnetic waves are among the topics treated. Prerequisite: PHY 112, MAS 261, and MAS 266. 3 credits.

**PHY 322. Electricity and Magnetism II.** Second semester of the theory of the basic phenomena of electromagnetism together with the application of fundamental principles of the solving of problems. The electric and magnetic properties of matter, direct current circuits, alternating current circuits, the Maxwell field equations and the propagation of electromagnetic waves are among the topics treated. Prerequisites: PHY 112, MAS 261, MAS 266. 3 credits.

**PHY 327. Experimental Physics.** Experimental work selected from the area of mechanics, AC and DC electrical measurements, optics, atomic physics, and nuclear physics, with emphasis on experimental design, measuring techniques and analysis of data. Prerequisite: PHY 211. 3 credits.

**PHY 421. Quantum Mechanics I.** A study of selected topics in modern physics, utilizing the methods of quantum mechanics. The Schrodinger equation is solved for such systems as potential barriers, potential wells, the linear oscillator and the hydrogen atom. Perturbation techniques and the operator formalism of quantum mechanics are introduced where appropriate. Prerequisites: PHY 211 and MAS 266, or permission. 3 credits.

**PHY 422. Quantum Mechanics II.** Second semester of a study of selected topics in modern physics, utilizing the methods of quantum mechanics. The Schrodinger equation is solved for such systems as potential barriers, potential wells, the linear oscillator and the hydrogen atom. Perturbation techniques and the operator formalism of quantum mechanics are introduced where appropriate. Prerequisites: PHY 211 and MAS 266, or permission. 3 credits.

**POL 110. American Politics and Government.** This course provides students with a critical understanding of the U. S. political process and analytical tools to evaluate authority structures that exercise power and influence. 3 credits.

**POL 207. Europe in the 20th Century.** An introduction to the main political, social, economic and intellectual developments in twentieth-century Europe. The major themes of the course include the experience of the two world wars; the development of fascist and communist regimes under Lenin and Stalin, Mussolini, and Hitler; the weakness of the western democracies after World War I; the Holocaust; the Cold War; the Communist Bloc; the end to colonialism; the European Union; the development of the welfare state, and the new nationalism. Prerequisite: Sophomore standing or permission of instructor. 3 credits. [This course is cross-listed with HIS 207]

**POL 210. Comparative Politics.** This is an introduction to the study of comparative politics: the comparison of political systems in order to understand how and why these systems function differently. The course is built around three fundamental questions: What is comparative politics? What kinds of phenomena do we compare? What are the major theoretical approaches that guide our studies? We also examine

distinctions between the "developing" and the "developed" worlds, and between authoritarian and democratic political regimes. The last half of the semester is devoted to the study of individual country case studies, with an emphasis on those in Africa, Latin America, Asia and the Middle East. Fulfills requirement: Intercultural Competence. 3 credits.

**POL 245. International Relations.** This course uses the levels of analysis approach to understand international politics and theories in international relations to draw connections between concepts and world issues. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**POL 256. Political Behavior.** A key principle of democratic theory is the sovereignty of the people. Thus, the notion of the "will" and "power" of the people matters in democratic societies such as the U. S., and helps us understand how the political system operates. This course examines critical topics including interest group behavior, political parties, elections, public opinion, and political communication and the mass media. 3 credits.

**POL 261. The Presidency and Congress.** This course examines the high-stakes political relationship between the presidency and Congress as well as the controversies and conflict shaping contemporary presidential and congressional politics. Fulfills requirement: Critical Thinking through Writing. The prerequisite for Spring 2020 is waived. 3 credits.

**POL 275. Human Rights.** This course develops an understanding of the practice of global human rights. This course is taught every other summer at Maastricht University in the Netherlands. 3 credits.

**POL 280. Terrorism and Extremism.** This course will challenge students to develop a better understanding of terrorism, the motivations of terrorists, terrorist strategies and operations, the environments in which terrorists operate, weapons of mass destruction, state sponsorship of terrorism, and the means by which governments, especially the United States have responded to contemporary terrorism. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**POL 312. United States Foreign Policy.** This course examines the domestic interests, values, and political institutions and international forces and pressures that shape the conduct of United States foreign policy. Fulfills requirement: Critical Thinking through Writing. Prerequisites: Sophomore standing or permission of the instructor. 3 credits.

**POL 316. Civil Liberties and Civil Rights.** This course uses key cases to study important doctrines established by the Supreme Court with regard to civil rights and civil liberties. Students will examine the Court's rulings concerning the establishment and free exercise of religion, protection of freedom of speech and of the press, privacy rights (abortion and sexual freedom), the rights of the accused in the criminal justice system, and the law governing racial or sexual discrimination. The course places particular emphasis on various forms of textual interpretation used by individual justices to apply the Constitution in deciding cases and writing opinions. Prerequisites: Sophomore standing or permission of the instructor. LAW 215 recommended. 3 credits. [This course is cross-listed with LAW 316]

**POL 345. Philosophical Foundations of Politics.** Students in this course study the development of Western political thought from Classical Greece to modern times, examining the conceptual evolution of citizenship, civic obligation, and the nature of justice and exploring the connection between moral and positive law in the western tradition. Prerequisite: Junior standing or permission of the instructor. 3 credits.

**POL 352. Public Policy and Public Administration.** Public policies affect the lives of all Americans, and public administrators are the main touchstones with government for most citizens. In the first half of the course we focus on how and why the public policymaking process functions as it does, and examine various areas of policy at the national and state levels. In the second half, we turn to the implementation of policy by government agencies and the management of public organizations. This course is of value to all citizens in a democracy, but will be particularly helpful for students in any discipline whose careers are affected by public policy, or who are considering a career in government. 3 credits.

**POL 353. Marx and Marxism.** Karl Marx is among the most influential thinkers in the modern world, and the ideology of Marxism has helped shape the cultural, religious, economic, and political history of the nineteenth and twentieth centuries. This course will examine Marx and Marxism(s) from an interdisciplinary perspective, first by exploring the life and work of Marx, and Marxist parties and movements, and then by examining the effects Marx's thinking has had on global politics, economic theory, religion, and philosophy. By examining the historical and philosophical roots and continuing significance of Marx and Marxism, students will have an occasion to practice a multidisciplinary study of a historical figure and movement and become better informed about intellectual and political history and how those continue to shape the world around us. Prerequisite: Junior or senior standing required. 3 credits.

**POL 370. Research Methods in Political Science.** Students will learn various qualitative and quantitative research methods in political science and how to write an empirical research design. Fulfills requirement: Quantitative Reasoning. 3 credits.

**POL 376. Civic and Political Engagement.** This community-based learning course is designed to give students an understanding of key concepts and frameworks of civic and political engagement. Students will engage in the civic life of communities and with power structures through direct, experiential service. Fulfills requirement: Immersive Experience. 3 credits.

**POL 380. European Union Simulation.** This course offers an enriching, hands-on, interdisciplinary exploration of the dynamic processes of policy formation in the core institutions of the European Union. Near the end of the semester, students participate in the simulation in Washington D. C., organized by the Mid-Atlantic European Union Simulation Consortium (MEUSC). This experiential learning program endeavors to connect American students to EU policy makers and policy making in a unique way, utilizing the simulation experience to bridge the gap between the academic study of the EU and the actual political processes of the European Union. Students engage in discussions and debates about the EU that are current and topical in EU decision-making circles. A distinct theme is chosen as the focus of the simulation each year. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisite: Junior or senior standing. Course may be repeated for credit. 3 credits.

**POL 390. Special Topics in Political Science.** Special topics course in Politics. Topic to be announced. This course may be repeated for credit as topic changes. 3 credits.

**POL 400. Internship.** Field experience in a political science environment. May be repeated for credit (up to 12 credits of internship may be counted toward the degree). Fulfills requirement: Immersive Experience. Prerequisite: GPA of 2.50 in major and permission of department chair. Students taking more than six internship credits in politics please note: POL 400 may count for no more than two elective courses in the POL major. 1-12 credits.

**POL 450. Politics Conference Presentation.** Students present their research on politics at an academic conference. Graded pass/fail. 0 credits.

**POL 550. Advanced Research.** Advanced Research. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. 1-3 credits.

**POL 599. Honors in Politics.** Students with junior or senior standing, who are majoring in Politics, are eligible to apply for Departmental Honors in Politics. Students must have a GPA of 3.5 in their major courses and a cumulative GPA of at least 3.0. These requirements must be met both at the time of application and at the time of graduation. The honors program includes a substantial piece of work requiring extensive independent research, resulting in a high-caliber thesis. A thesis of this quality requires sustained research effort throughout at least one semester. Normally, students will develop and write their thesis as part of a POL 500 Independent Study. Students who successfully complete and defend their Honors project will receive recognition on their College transcript. 0 credits.

**PSY 110. General Psychology.** This course is designed as an introduction to the conceptual and methodological foundations of psychological science. Through a broad exploration of neuroscience, cognition, social processes, development, and psychopathology, the course provides a conceptual background for understanding behavior, and active engagement with the scientific process including the addressing of connections between research and theory, and the role of empirical data, in understanding psychological processes. 3 credits.

**PSY 125. Readings in Psychology.** Students will develop skills in knowledge acquisition and articulation by exploring psychological ideas within primary and secondary scholarly material, as well as mass media sources. Specific activities will involve engaging students in critical reading and information literacy tasks, as well as oral and written communication assignments, applied to behavior-based themes appearing in publications from before and during psychology's founding era (i. e., the late 1800s-1950s) through the present day. 3 credits.

**PSY 148. Health Psychology.** This course is designed as an introduction to health psychology/behavioral medicine. It will consider the role of psychology in the health field, including medical settings. It covers the relationship between psychological factors and physical disease from predisposition through maintenance. The study of behavioral medicine will include treatment of stress and stress-related disorders, preventive health behaviors and factors related to adherence of treatment programs. It also explores the psychological connections of pain and pain management, and how personal control is related to both health and the disease process. 3 credits. [This course is cross-listed with EXSC 148]

**PSY 149. Psychology of Sport.** This course is designed as an introduction to sport and exercise psychology. It will consider the role of psychological variables in training and performance, including personality, arousal, and motivation, and review overtraining, burnout, and injury. It will explore the role of communication, leadership, and team dynamics. It will cover psychological skills training techniques and strategies for performance improvement. 3 credits.

**PSY 170. Forensic Psychology.** This course will focus on three critical areas that fall under the umbrella of forensic psychology. First, students will be introduced to the area of legal psychology, including applied empirical research on issues important to the legal system such as eyewitness accuracy, police selection, jury decision making, and legal assumptions about human behavior relevant to the rights of defendants, victims, children, and consumers of mental health services. Second, the area of psychological jurisprudence will be explored by studying efforts to develop a philosophy of law and justice based on psychological values. Third, students will be introduced to the concepts generally thought of as forensic psychology, such as criminal profiling, insanity defense, competence to stand trial, and child custody decisions. 3 credits. [This course is cross-listed with SOC 170]

**PSY 173. Junk Science and Paranormal Phenomena.** This course addresses the mechanisms underlying the formation of beliefs, with an emphasis on exploring both (a) real-world junk science (that corrupts scientific methods in order to manipulate and exploit the general public on issues with broad societal impact) and (b) paranormal claims (that involve describing perceived events with explanations that extend beyond the boundaries of established science). In addition, the course focuses on the importance of skeptical inquiry, critical thinking, logical inference, information literacy skills and scientific procedures when evaluating issues that span from everyday/mundane matters to those with supernatural/questionable elements. Fulfills requirement: Critical Thinking through Writing. Prerequisite: FYE 111 and 112, or sophomore standing, or permission of instructor. 3 credits.

**PSY 175. Neuropsychology.** This course serves as an introduction to the content areas and methodology of neuropsychology, the study of the relationships between brain function and behavior. Topics include basic communication in the nervous system, organization and function of sensory and motor systems, hemispheric specialization, localization of function, brain injury and plasticity, and issues associated with neuropsychological assessment. 3 credits.

**PSY 199. Professional Development I.** Within the context of a variety of required assignments, students will acquire information about careers in (or related to) psychology, their personal professional interests, as well as the experiences they need to obtain as undergraduates to prepare them for their post-collegiate pursuits. Students can complete course activities at any time during freshman or sophomore year, and submit finished assignments to their advisor; however, they should only register for the class during the semester by which all requirements will have been met. This course must be completed before the start of junior year. Graded pass/fail. Course restricted to Psychology majors. 0 credits.

**PSY 211. Research Methods in Psychology.** This foundational laboratory course introduces students to scientific methodology and experiment design as it applies to psychology. Students learn how to identify research questions through literature reviews, develop hypotheses, appropriately design and conduct research projects, and draw conclusions from the findings. The course engages students in data-collection laboratory experiences that culminate in the development, execution, analysis and APA-style presentation of an original experiment on a behavior-related topic of their own choosing. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 4 credits.

**PSY 220. Lifespan Development.** This course provides an overview of developmental phenomenon focusing heavily on the prenatal environment through adolescence and highlighting adulthood and aging. Further, we will go beyond a 'milestone approach' to developmental psychology - in other words, rather than just memorizing what ages and stages children acquire certain skills, we will strive to understand why and how those skills are developing. Students will learn to articulate the relationship between theory and data and synthesize information to critically evaluate current developmental theories and apply developmental concepts to real-world issues. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 246. Social Psychology.** A study of the inter- and intra-personal relationships between individuals and groups, with emphasis on theories and research studies. The topics covered may include attitude development and change, conformity, persuasion, person perception, attribution, attraction and group processes. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 257. Addictions and Behavior.** The course will cover drug mechanisms, theories of addictions, treatments of addictions, and the impact of addictions on people and society. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 263. Cognitive Science.** This course explores the human mind by integrating various perspectives on the mechanisms and processes underlying thinking. Specific topics discussed in this framework include perception, recognition, attention, memory, knowledge organization, imagery, language, intelligence, reasoning, and thought-related dysfunctions. Students will work towards understanding the connections between cognitive theories and both real-world events and lab-based data, as well as how to synthesize information when developing conclusions about how the mind works. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 265. Abnormal Behavior and Experience.** A study of mental, emotional and behavioral problems, including alcohol and drug abuse, brain disorders, criminal and psychopathic behavior, neuroses, psychophysiological reactions, psychoses, sexual deviations, subnormal intelligence and suicide. Prerequisite: PSY 110, or 111/L, or 112, or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 275. Psychological Measurements.** An introduction to the principles of psychological measurement, methods of test design and construction, and applications and interpretations of existing psychological tests. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits.

**PSY 278. Brain and Behavior.** This course provides a basic introduction to the structures and functions of the nervous system, while exploring the methods and theories that allow us to understand normal and abnormal behavior. Students will learn the essentials of neuroanatomy and neurophysiology, including a basic introduction to neurons, brain organization, and functional specialization of brain structures related to behaviors such as learning and memory, reward, sexuality, language, and sensory/motor systems. Prerequisite: PSY 110 or 125, or junior-level Psychology or Neuroscience major or minor. 3 credits. [This course is cross-listed with NEU 278]

**PSY 299. Professional Development II.** Within the context of a variety of required assignments, students will take what they've previously learned (in PSY 199) about careers in (or related to) psychology, their personal interests, as well as their obtained undergraduate experiences and analyze it all on a deep level, to make a plan as to the specific professional path they intend to pursue. Then utilize that knowledge towards preparing application materials for entry into graduate school or workforce positions. Students can complete required activities at any time during junior or senior year, and submit finished assignments to their advisor; however they should only register for the course during the semester by which all requirements will have been met. Graded pass/fail. Prerequisites: PSY 199. Course restricted to junior or senior Psychology majors. 0 credits.

**PSY 312. Statistics and Data Analysis.** This laboratory course explores the basic quantitative and qualitative statistics and data-based analytical methods used by scientists to interpret and understand behavior. Topics include the logic of the scientific method applied to data analysis, descriptive statistics, the foundations and utility of inferential statistics, and the statistical methodologies of simple and advanced hypothesis testing. Fulfills requirement: Quantitative Reasoning. Prerequisite: PSY 211, or junior level Psychology or Neuroscience major or minor, or permission of the instructor. 4 credits.

**PSY 320. Analytic Seminar: Human Development.** This course applies the central themes of human development (e. g. nature versus nurture, continuity versus discontinuity) to a particular sub-topic (e. g. language) or specific age-range (e. g. infancy, adolescence) to consider the scientific foundations and implications of human development. Students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw conclusions. Within the course, the primary focus will be on this type of critical analysis through a variety of activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 330. Analytic Seminar: Cognitive Processes.** This course examines how thinking occurs. Students will take a broad issue within cognition (which could arise anywhere from the initial attending to sensory inputs that lead to early perceptual organization, to deeper cognitive activities that play roles in imagery, memory, language, reasoning, and intelligence) and then critically examine focused theories concerned with the mechanisms argued to underlie how that element of thought manifests itself. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw conclusions. Within the course, the primary focus will be on this type of critical analysis through a variety of activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 342. Analytic Seminar: Science of Emotion.** This course examines the philosophical, psychological, and scientific foundations and implications of the emotion process and relevant psychological concepts (e. g. motivation, cognition, and social perception). The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 350. Analytic Seminar: Psychopathology.** This course examines psychopathology from a multi-disciplinary perspective emphasizing empirically supported theories and research. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 351. Analytic Seminar: Clinical Treatment.** This course examines clinical treatment from a multi-disciplinary perspective, emphasizing empirically supported theories and research. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 360. Analytic Seminar: Behavioral Neuroscience.** This course will examine the role of biological mechanisms in influencing human experiences such as perception, learning, memory, cognition, and motivation. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits. [This course is cross-listed with NEU 360]

**PSY 361. Analytic Seminar: Psychopharmacology.** This course will take an interdisciplinary approach to examining the neurochemistry and physiology of the brain, related behaviors, and how drugs affect both brain and behavior. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits.

**PSY 367. Analytic Seminar: Behavioral Genetics.** This course will take an interdisciplinary approach to examining variations in genotype and their behavioral correlates. We will study the biological principles of genetics and how they relate to personality traits, diseases, and disorders. The nature of this field provides an appropriate context by which students will be able to (a) analyze and interpret data and (b) evaluate the strengths and weaknesses of various competing theories and the evidence used to assess these theories to draw activities, readings, and/or projects. Prerequisites: PSY 211 and 312; or senior level Psychology major or minor; or by permission of the instructor. 4 credits. [This course is cross-listed with NEU 367]

**PSY 400. Internship.** This course focuses on practical and professional work experience related to the student's work or research interests or graduate school plans. Internships are limited to off-campus sites only. Students should not take more than six credits per semester. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisites: At least junior level Psychology or Neuroscience major or minor; and completion of Department application; and approval of internship site by Department's internship coordinator. 1-12 credits.

**PSY 405. Collaborative Research.** The goal of this course is to help students become proficient researchers. Working with a faculty mentor, students will demonstrate their ability to apply the skills developed within the psychology curriculum via their application within the context of every aspect of a research project (literature reviews, experimental design, participant recruitment, data collection/coding/analyses, and presenting results in various formats). In addition to gaining firsthand knowledge about a specific research field, students will also acquire technical and practical skills (e. g. critical thinking, oral and written presentations, collaboration, personal responsibility) that will be helpful to both major coursework and career preparation. Students will also have the opportunity to participate in professional activities in the academic community (e. g. conference presentations and journal articles). Course may be repeated for credit, for up to 7 credits toward the Psychology major, and up to 12 credits toward graduation requirement. Enrollment by permission of the instructor only. 1-3 credits.

**PSY 406. Collaborative Research (immersive).** Working with a faculty mentor, students will complete a research apprenticeship that will require them to utilize the work skills developed within the psychology curriculum via their application within the context of every aspect of a research project (literature reviews, experimental design, participant recruitment, data collection/coding/analyses, and presenting results in various formats). Students will also acquire technical and practical skills that will be helpful to both major coursework and career preparation, have the opportunity to participate in professional activities in the academic community (e. g., conference presentations and journal articles), and complete a written reflection paper addressing how this immersive experience helped them grow socially, intellectually and professionally. Graded pass/fail. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Enrollment by permission of the instructor only. 1-3 credits.

**PSY 430. Senior Seminar.** Students will have the opportunity to synthesize all the skills gained throughout the psychology program by completing projects requiring them to initially identify and acquire needed information concerning current psychology-related societal problems such as those impacting community organizations in mental- and physical-healthcare, government, education, philanthropy, and other related fields. They will then assemble their obtained data meaningfully, and analyze it effectively to generate a realistic solution capable of yielding a practical benefit to the impacted community. Projects will culminate in written and oral reports highlighting the final product to stakeholders within and external to the College. Prerequisites: 1 course from PSY 320, 330, 342, 350, 351, 360, 361, or 367. Course restricted to senior-level Psychology major. 3 credits.

**REL 120. Religious Diversity in America.** A study of the origin and development of religious expression in America. Special emphasis will be given to issues of religious diversity. Fulfills requirement: Intercultural Competence. 3 credits.

**REL 140. Encountering World Religions.** This course examines the beliefs and practices of some of the world's major religious traditions and significant religious movements, focusing predominantly on non-Christian or non-European traditions. The course will be oriented topically (ritual, theology, etc.), geographically (India, the Middle East, etc.), or thematically (religion in the modern world, religious encounters in history, etc.) Fulfills requirement: Intercultural Competence. 3 credits.

**REL 142. Study Away: World Religions in London.** This course is a one-week study abroad program available to students enrolled in relevant Religion classes. Students will stay in London, UK and visit museums, historical sites, and religious organizations in order to expand the "encounter" with religion in the classroom. The primary purpose of the class is to give students the opportunity to encounter the religious diversity of a major foreign urban center. This course may be repeated for credit as topic changes. Corequisite: Take REL-140 or REL-240.1 credit.

**REL 200. Comparative Scripture.** This class aims to introduce students to the study of scripture as a key aspect of religiosity. It will be cross-cultural in nature and familiarize students with a variety of religious texts from several religious traditions. The study of textual religious expression will come from reading both primary sources and theoretical works on the study of scripture. Fulfills requirement: Intercultural Competence. 3 credits.

**REL 202. Jewish and Christian Scripture.** A study of the Hebrew Bible and New Testament and related literature, including its historical and social context. 3 credits.

**REL 311. Interdisciplinary Seminar in Religion.** The course focuses on the issues surrounding one central topic in the study of religion. Students will take an interdisciplinary approach to such topics as God, Postmodern Philosophy and Theology, Existentialism and Religion, Religion and Violence, Religious Fundamentalism, The Problem of Evil. This course may be repeated for credit as topic changes. Fulfills requirement: Critical Thinking through Writing. 3 credits.

**SED 115. Introduction to Teaching and Learning.** This course is designed to provide an introduction to secondary education majors about how people learn and how to successfully use that information in the classroom. It will cover the characteristics of secondary schools and students and the management of teaching and learning resources. 2 hours a week of fieldwork is required. 3 credits.

**SED 362. Teaching of the Sciences in the Secondary Schools.** This course will offer comprehensive preparation for teaching science in secondary schools through discussing, reading, writing, and completing projects. As part of this course, students will design lesson plans that will include teaching the literacy of science for all students including those with disabilities; explore and utilize materials, techniques and methods of lab instruction for a variety of populations including those with disabilities; create and teach a lesson for a target audience; synthesize, reconfigure, and connect what they have learned within the areas of scientific literacy, writing and education; evaluate student work by creating their own rubrics to assess learning in units and assignments for all students including those with disabilities; use technology effectively as an instructional tool; establish and practice appropriate classroom management strategies. 4 hours a week of fieldwork is required. Prerequisite: Biology, Chemistry, or Physics major or permission of the instructor. 3 credits.

**SED 363. Teaching of Social Sciences in the Secondary Schools.** This course will offer comprehensive preparation for teaching social studies in secondary schools through discussing, reading, writing, and completing projects. As part of this course, students will establish and practice appropriate classroom management strategies; design lessons/units of study that meaningfully integrate different and varied aspects of social studies; develop appropriate assessment strategies for all students including those with disabilities; explore and utilize materials, techniques and methods of classroom instruction for a variety of populations including those with disabilities; synthesize, reconfigure, and connect what they have learned within the areas of social studies literacy, writing and education; evaluate student work by creating their own rubrics to assess learning; use technology effectively as an instructional tool. 4 hours a week of fieldwork is required. Prerequisite: Social Studies major or permission of the instructor. 3 credits.

**SED 364. Teaching of English in the Secondary Schools.** This course will offer comprehensive preparation for teaching English in secondary schools through discussing, reading, writing, and completing projects. As part of this course, students will establish and practice appropriate classroom management strategies; design lessons/units of study that meaningfully integrate different and varied aspects of social studies; develop appropriate assessment strategies for all students including those with disabilities; explore and utilize materials, techniques and methods of classroom instruction for a variety of populations including those with disabilities; synthesize, reconfigure, and connect what they have learned within the areas of social studies literacy, writing and education; evaluate student work by creating their own rubrics to assess learning; use technology effectively as an instructional tool. 4 hours a week of fieldwork is required. Prerequisite: English major or permission of instructor. 3 credits.

**SED 365. Teaching of Second Languages in Schools.** This course will offer comprehensive preparation for teaching foreign language in secondary schools through discussing, reading, writing, and completing projects. As a part of this course, students will synthesize, reconfigure, and connect what they have learned within the areas of language acquisition, teaching, writing, and education to formulate a mission statement for their own teaching practice; evaluate student work by creating their own rubrics to assess learning in foreign language acquisition, units of study and assignments; use technology effectively as an instructional tool; establish and practice appropriate classroom management strategies for all students including those with disabilities; design lessons/units of study that meaningfully integrate different and varied aspects of foreign language acquisition for all students including those with disabilities; develop appropriate assessment strategies for all students including those with disabilities; explore and utilize materials, techniques and methods of classroom instruction for a variety of populations. 4 hours a week of fieldwork is required. Prerequisites: Foreign Language major or permission. 3 credits.

**SED 366. Teaching of Mathematics in the Secondary Schools.** This course will offer comprehensive preparation for teaching mathematics in secondary schools through discussing, reading, writing, and completing projects. Students enrolled in this course will explore and utilize materials, techniques and methods of instruction for a variety of populations; synthesize, reconfigure and connect what they have learned within the areas of mathematical literacy, writing, and education; evaluate student work by creating their own rubrics to assess learning in units and assignments for all students including those with disabilities; use technology effectively as an instructional tool; establish and practice appropriate classroom management strategies for all students including those with disabilities; design lessons/units of study that meaningfully integrate different and varied aspects of mathematics; explore and utilize materials, techniques and methods of classroom instruction for a variety of populations. 4 hours a week of fieldwork is required. Prerequisites: Mathematics major or permission. 3 credits.

**SED 421. Content Area Literacy.** This course will guide preservice students to develop competencies in teaching literacy strategies in their content area subject(s) in middle and high school. Emphasis will be placed on teaching activities, specialized skills, technology skills and study strategies for learning substantive content. 4 hours a week of fieldwork is required. Prerequisite: SED 115. 3 credits.

**SED 431. Practicum and Methods II.** This course is designed to provide preservice secondary education students with the skills to develop an integrated approach to teaching and learning. Students will create lesson and unit plans and develop integrated curricula. 4 hours a week of fieldwork is required. Prerequisites: SED 115, 421; secondary teacher certification candidate; junior or senior status; permission of the instructor; must be taken the semester prior to SED 440. 3 credits.

**SED 440. Student Teaching.** Students spend an entire semester in an area school under the supervision of a cooperating teacher. Fulfills requirement: Immersive Experience. Prerequisites: A cumulative grade point average at or above the minimum GPA specified by PDE for the secondary 7-12 certificate, SED 431 and the appropriate teaching of course for the content certification, completion of all Chapter 354 and Act 49-2 course requirements. 12 credits.

**SOC 110. Introduction to Sociology.** An introduction to the sociological perspective with a focus on how individual behavior is shaped by the social context. The nature and characteristics of human societies and social life are examined from a perspective known as the "sociological

imagination". Topics range from the influence of culture on human behavior, the development of the self, group dynamics, deviance, population, and social inequality. Fulfills requirement: Intercultural Competence. 3 credits.

**SOC 120. Introduction to Anthropology.** Introduction to both physical and cultural anthropology including human evolution, human variation, and cross-cultural analysis and comparison. 3 credits.

**SOC 162. Race and the Intersections of Identity.** This course examines how race continues to be a central feature of identity in America. Students will explore how multiple facets of identity - such as class, ethnicity, gender, and sexuality - intersect with race and form a complex matrix of inequality that has shaped the United States, in the past as well as the present. Understanding such complex intersections of identity will prepare students to work affectively in diverse domestic and global contexts. Fulfills requirement: Intercultural Competence. 3 credits.

**SOC 170. Forensic Psychology.** This course will focus on three critical areas that fall under the umbrella of forensic psychology. First, students will be introduced to the area of legal psychology, including applied empirical research on issues important to the legal system such as eyewitness accuracy, police selection, jury decision making, and legal assumptions about human behavior relevant to the rights of defendants, victims, children, and consumers of mental health services. Second, the area of psychological jurisprudence will be explored by studying efforts to develop a philosophy of law and justice based on psychological values. Third, students will be introduced to the concepts generally thought of as forensic psychology, such as criminal profiling, insanity defense, competence to stand trial, and child custody decisions. 3 credits. [This course is cross-listed with PSY 170]

**SOC 210. Social Problems.** Contemporary social problems are examined from a constructionist perspective. Topics selected for study vary according to societal trends, but typically include an examination of social change, poverty, globalization, environmental degradation, deviance, and health. Prerequisite: SOC 110.3 credits.

**SOC 226. Women and Gender Issues.** An examination of women's contributions to the world, their roles in social institutions, and issues arising from their uniqueness and social situations. Topics will include images of women and their writings; biology and health; issues of sexuality and gender identity; and women's roles in the family, religion, education, and in the worlds of work and politics. Prerequisite: SOC 110.3 credits.

**SOC 240. Diversity and Intercultural Communication.** The major objective of this course is to help students become aware of the degree to which behavior (including one's own) is culturally determined. As we continue to move toward a global society with increasingly frequent intercultural contacts, we need more than simple factual knowledge about cultural differences; we need a framework for understanding inter-cultural communication and cross-cultural human relations. Through lecture, discussion, simulations, case-studies, role-plays and games, students will learn the inter-cultural communication framework and the skills necessary to make them feel comfortable and communicate effectively with people of any culture and in any situation involving a group of diverse backgrounds. Fulfills requirement: Intercultural Competence. 3 credits.

**SOC 250. Population and Society.** This course is designed to introduce students to the issues, both national and global, that relate to population trends and policies. This course will cover the basics of demographic methods and techniques; familiarity with the three components of population studies: fertility, mortality, and migration; and a general knowledge of population policy issues. Emphasis shall be placed on the sociological perspective of population as well as the role of the individual student in population and environmental challenges and solutions. 3 credits.

**SOC 261. Perspectives on Aging.** Introduction to the study of aging from a multidisciplinary perspective. Topics include the biology of aging, demographic trends in aging, and aging impacts on social institutions and society. Policies on aging are reviewed. Prerequisite: SOC 110.3 credits.

**SOC 271. Child Abuse.** The study and analysis of child abuse in its various expressions with additional focus on physical and sexual abuse. Emphasis will be on models and theories of causation, dynamics, treatment and research. Prerequisite: SOC 110.3 credits.

**SOC 272. Substance Abuse.** An examination of the problems associated with substance abuse including a study of the prevalent myths concerning substance abuse, and exploration of the causes of substance abuse and an exploration of how it affects the individual, the family and society as a whole. In addition, the course will examine current methods of intervention and treatment. Prerequisite: SOC 110.3 credits.

**SOC 280. Genders and Sexualities.** Study of human sexuality from psychosocial and cultural perspectives. The course will include an examination of such topics as developmental sexuality, gender roles, sexual communication, sexual orientation, coercive sex, sexually transmitted diseases, HIV, and religious and ethical perspectives on sexuality. Prerequisite: SOC 110.3 credits.

**SOC 290. Special Topics in Sociology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: SOC 110.3 credits.

**SOC 292. Special Topics in Family Studies.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**SOC 310. Research Methods for the Social Sciences.** This laboratory course builds skills in basic data management, statistical analysis, and interpretation of statistical information. The course reviews how to interpret both descriptive and inferential statistical analysis. The skills acquired in this lab are employed in research methods to aide students in the design, analysis, and presentation of their research project. Fulfills requirement: Quantitative Reasoning. Prerequisite: SOC 110; plus 9 credits of Sociology at the 200-level or above; or permission of instructor. 3 credits. [This course is cross-listed with CRJ 310]

**SOC 311. Research Statistics for Social Science.** Experiential-based course covering fundamental concepts and problems in social science research. Topics include ethics or research on human behavior, design, measurement, sampling, and interviewing and questionnaire construction. There is an emphasis on four research methods: available data, survey research, experiments, and field research. Prerequisite: SOC 310.3 credits. [This course is cross-listed with CRJ 311]

**SOC 321. Social Theory.** This course covers a critical examination of selected classical and contemporary theorists, including Marx, Durkheim, Weber, Parsons, Foucault, Bourdieu and Giddens. Classical, modern, post-modern and globalization theories will be covered. A meta-analytical approach will be used, looking at the social construction of theory. Prerequisite: SOC 110 and 6 credits in sociology at the 200-level or above, or permission of the instructor. 3 credits.

**SOC 324. Medical Sociology.** An examination of the societal bases of health, illness and health care. The course will include an examination of the three components of medicine: the patient, the medical professional and the health care organization. Specific topics will include: the role of the patient; doctor-patient relationships; the socialization of medical professionals; the hospital as a complex organization, cross-cultural comparisons of health care and current topics of concern such as the AIDS epidemic, new technologies and social response to the terminally ill patient. Prerequisites: SOC 110 plus 9 credits of sociology at the 200-level or above and junior standing, or permission of the instructor. 3 credits.

**SOC 330. Marriage and Family.** This course examines selected topics and research in the interdisciplinary field of marriage and family studies. Students will explore how the definitions and functions of families are changing by researching demographic trends, theories, myths, and media representations. Students should leave this course with a basic understanding of the historical context of marriage and family; familiarization with the tools used to study marriage and family issues; a general knowledge of how gender, social class, family structure, and race impact definitions of family; and a heightened awareness of interactions between work and family responsibilities. Prerequisite: SOC 110. 3 credits.

**SOC 370. Adoption.** This course will focus on populations involved in adoption, including birth parents, adoptees, foster and adoptive families and agencies, in both domestic and transnational adoptions. Special consideration will be given to recent policies and vehicles that have been put into place to facilitate the permanency placement of children. A consideration of ethics in adoption will be a central theme of the course. An examination of cultural, economic and policy factors in countries involved in transnational adoption will be included. The health (both physical and psychological) and cultural issues of adoptees and services that address these will be addressed. Prerequisites: SOC 110 and 6 credits in sociology at the 200 level or above, or permission of the instructor. 3 credits.

**SOC 390. Special Topics in Sociology.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. 3 credits.

**SOC 392. Special Topics in Family Studies.** Topic announced at the time of registration. This course may be repeated for credit as topic changes. Prerequisite: SOC 110 and SOC 230. 3 credits.

**SOC 400. Internship.** Field experience for sociology or criminal justice majors. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Prerequisites for Criminal Justice majors: SOC 245, 331, and 333. Prerequisites for Sociology majors: SOC 110, SOC 311; 321 or 331. Seniors only or permission. 1-12 credits.

**SOC 499. Senior Seminar: Inequality.** A critical analysis of the selected topic: Inequality. This course will specifically focus on poverty and the impact of adverse child experiences on human outcomes. The course will be conducted as a seminar with a significant portion using a service learning format. This is a capstone course, required of all graduating Sociology and Criminal Justice majors. Fulfills requirement: Immersive Experience. Prerequisite: SOC 110, 310, 311; SOC 321 or 331; and senior standing. 3 credits.

**SPA 101. Elementary Spanish Level I.** Introductory course in Spanish. Aimed at developing basic communicative proficiency in Spanish. Also offers insights into Hispanic cultures. Fulfills requirement: Language and Culture. \*Note: This course does not satisfy LAC, Formative, or any Constellation requirement for students enrolled prior to Fall 2019. 3 credits.

**SPA 102. Language and Culture in the Spanish-Speaking World - Elementary Level II.** SPA 102 is an active and immersive language and culture course, taught almost entirely in Spanish in which students will develop skills in listening, speaking, reading, and writing in Spanish and cultural awareness of the cultures associated with Spanish. Fulfills requirement: Language and Culture. Prerequisite: SPA 101 or placement test. 3 credits.

**SPA 201. Language and Culture in the Spanish-Speaking World - Intermediate Level I.** This is an active and immersive language and culture course, taught almost entirely in Spanish in which students will develop skills in listening, speaking, reading, and writing in Spanish and cultural awareness of the cultures associated with the Spanish. Fulfills requirement: Language and Culture. Prerequisite: SPA 102 or placement test. 3 credits.

**SPA 202. Language and Culture in the Spanish-Speaking World - Intermediate Level II.** This is an active and immersive language and culture course. Taught almost entirely in Spanish in which students will develop skills in listening, speaking, reading, and writing in Spanish and cultural awareness of the cultures associated with Spanish. Fulfills requirement: Language and Culture. Prerequisite: SPA 201 or placement test. 3 credits.

**SPA 300. Advanced Spanish: Oral Communication.** This is an active and immersive course focused on the intensive use and analysis of spoken Spanish, including phonetics and phonology, designed to help students work toward a near native-like pronunciation and intonation. Classroom activities will include the practicing of oral skills such as summarizing, telling, narrating, explaining, arguing a point, discussions, and presentations. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement into 300-level or higher according to the placement test. Students who have been placed into SPA 311 may not take this course. 3 credits.

**SPA 305. Summer Study Abroad in Costa Rica.** This four-week Spanish language and culture course provides students intermediate and advanced proficiency in Spanish language with emphasis on cultural immersion in an authentic Hispanic environment. This course combines a four-hour daily classroom instruction with cultural activities, field trips, and community engagement. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or equivalent, permission of the instructor. 6 credits.

**SPA 310. Advanced Grammar and Writing.** This course is an advanced course designed to help students develop communication, writing, and reading skills in Spanish, as well as an awareness and appreciation of Hispanic culture(s). It takes an interactive communicative approach and stresses cultural competency in language learning and successful communication. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement into 300-level or higher according to the placement test. 3 credits.

**SPA 311. Spanish for Heritage Speakers.** This is a special course for Hispanic, Latinos or students that have been exposed to Spanish consistently at home while growing up, have listened to it and want to develop the formal aspects like grammar, more extensive vocabulary and cultural information about their own places of origin. This class will include readings, movies and studies of geographical areas and maps in order to examine historical and social events represented in the students' countries of origin and will require work outside class in the Latino community. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement into 300-level or higher according to the placement test; permission of the instructor or chair. 3 credits.

**SPA 321. Spanish for the Global Market.** This course will prepare students for communication in the Hispanic commercial world by building upon their existing knowledge and emphasizing practical, real-life use of oral and written Spanish. Topics included are the international market, human resources, marketing, and advertising. Spanish for the Global Markets is designed to introduce students to essential business terminology and language situations in common business contexts, reinforcing strategies for understanding, interpreting, and responding to new information. In addition, it will introduce students to the importance of cultural awareness in doing business in Spanish-speaking countries or with Hispanics in the United States. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement test. 3 credits.

**SPA 323. Spanish for Healthcare Professionals.** The number of Spanish-speaking patients entering the healthcare system continues to grow every year. This fact points to how important it is for healthcare providers to know medical Spanish, not only because it expands their career opportunities but also because it allows them to communicate and empathize directly with their patients. This course is organized in terms of specific medical themes, which include building of the patient-practitioner relationship, documenting medical history, injuries, mental health, and diet and nutrition. This course is intended for students who plan to work in the healthcare field and need to develop an awareness of the Hispanic culture. This course will introduce the student to a wide array of vocabulary particular to the medical field, as well as help the student develop a cultural understanding of medicine and illness in the Spanish-speaking world to prepare for potential work with Spanish-speaking patients in future careers in medicine, physical training, speech pathology, nursing, social work, translation/interpretation, or mental health settings. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement test. 3 credits.

**SPA 324. Spanish for Healthcare Professionals II.** SPA 324 is the sequence of Spanish for the Healthcare Professionals course. The course will continue the study of medical Spanish terminology and the cultural issues related to interactions with Spanish-speaking patients and their families in the clinical encounter. It will introduce the student to a wide array of vocabulary particular to the medical field, as well as help the student develop a cultural understanding of medicine and illness in the Spanish-speaking world to prepare for potential work with Spanish-speaking patients in future careers in medicine, physical training, speech pathology, nursing, social work, translation/interpretation, or mental health settings. These themes will allow participants to learn necessary vocabulary while learning essential grammar. Prerequisite: SPA 202 or placement test. 3 credits.

**SPA 330. Literatures in Spanish.** This course is an introduction to Literatures in Spanish, which offers a selection of authors and genres, introducing students to literary analysis through reading a selection of texts including novels, plays, short fiction, poetry, and lyrics. The primary objective of this course is to acquire communication skills in Spanish, and to develop an awareness and appreciation of Hispanic literature and cultures. Fulfills requirement: Language and Culture. Prerequisite: SPA 202 or placement test. 3 credits.

**SPA 345. Introduction to Spanish Linguistics.** Introduces students to the study of the systems of Spanish: syntax, phonology, lexicon and morphology and language as a social construct. Regional varieties of Spanish spoken in Spanish, Latin America and the US as well as Spanish in contact with other languages will be considered. Prerequisite: SPA 300.3 credits.

**SPA 355. Cultural Studies.** Cultural Studies focuses on the analysis of written and visual representations (theatrical productions, poems, short stories, novels, songs, films, documentaries, and other visual media) in order to analyze how Hispanic cultures have been represented, experienced and interpreted during different decades until the present moment. The study of contemporary cultural productions will also help us to better understand the impact of global issues in present-day Hispanic societies and the current debates about their significance and consequences in the political, social, cultural, and intellectual milieu. These texts will also prepare the student for further work in more advanced courses of Hispanic literature(s) and culture(s). Fulfills requirement: Language and Culture. Prerequisite: SPA 310 or SPA 311.3 credits.

**SPA 365. Global Hot Topics.** Global Hot Topics offers a study of the major issues confronting the world today, from the perspective of Hispanic cultures. This provides a means of better understanding both the origin of, and potential solutions to, those global issues and problems faced by contemporary societies. It takes an interactive communicative approach and stresses cultural competency in language learning and successful communication. This course may be repeated for credit as topic changes. Fulfills requirement: Language and Culture. Prerequisite: SPA 310 or SPA 311.3 credits.

**SPA 385. Latinos in the United States.** This course examines a definition of Latino literature and culture by reviewing some of the canonical and non-canonical texts and films produced about or by Central Americans, Mexican Americans, Chicano and Hispanic Caribbean writers in the diaspora. Fulfills requirement: Language and Culture. Prerequisite: SPA 310 or SPA 311.3 credits.

**SPE 250. Cognitive Development of Diverse Learners.** This course is designed to introduce all categories of disability. Specific attention will be given to the potential cognitive, physical, social, behavioral, and language differences in children with disabilities. Delivery approach will include, but not be limited to lecture, case study discussions, and writing instruction. Students will be expected to write two papers (totaling 3,000 words) researching various aspects of disability. Writing instruction will be provided throughout this course. The instructor will provide substantive written and/or oral feedback through individual writing conferences, which will be held throughout the semester. In addition, this course has a two hour per week required field experience. Fulfills requirement: Critical Thinking through Writing. Course restricted to Education majors. 3 credits.

**SPE 255. Special Education Processes and Procedures.** This course will begin with a historical overview of the field of special education, including key legislation and litigation that drives current practice. Assessment tools for diagnosing disability will be introduced, as well as assessment tools for documenting student progress. In addition, collaboration and communication skills essential for working as a part of the special education team will be practiced and further developed. Delivery approach will include, but not be limited to lecture, field experiences, and hands-on experience with various assessments. Two hours per week of fieldwork is required. 3 credits.

**SPE 258. Effective Instructional and Behavioral Strategies for Students with Disabilities.** The focus of this course content will be on (a) behavioral principles and their application in the classroom, (b) literacy development and literacy interventions for students with disabilities, and (c) evidence-based instructional strategies in other content areas, such as creative arts, mathematics, social studies, and science. Delivery approach will include, but not be limited to: lecture, case study applications, field experiences, hands-on experience with various literacy programs, and student presentations. Prerequisite: Restricted to Music majors and transfer students. 3 credits.

**SPE 260. Evidenced Based Effective Instruction in Educating Students Identified with a High Incidence Disability.** This course is designed to provide in-depth study of the high incidence disabilities (i. e., specific learning disabilities, speech and language impairments, intellectual

disabilities, emotional and behavioral disorders, and other health impairments). Specific attention will be given to the etiologies of various diagnoses, their prevalence, and their characteristics. Students will be prepared to offer special education using a least restrictive environment-school wide delivery model. Delivery approach will include, but not be limited to: lecture, case study discussions, project based learning, and text analysis. Prerequisites: SPE 250, or permission of the instructor. 3 credits.

**SPE 263. Intensive Math and Content Area Intervention Approaches.** The focus of this course will be on systematic, direct instruction approaches for teaching mathematics to students in grades PreK-8 who perform below grade level. In addition, this course will address adaptations and accommodations for the content areas of social studies, science, and health for those students with disabilities who read below grade level and therefore, have difficulty reading grade level text. Delivery approach will include, but not be limited to hands on activities, lesson planning, small group work, and application projects. Prerequisites: SPE 250, permission of the instructor. 3 credits.

**SPE 266. Evidenced Based Effective Instruction in Intervention Approaches Educating Students Identified with a Low Incidence Disability.** This course is designed to provide in-depth study of the low incidence disabilities (i. e., autism, developmental delay, multiple disabilities, deaf-blindness, visual impairments, hearing impairments, orthopedic impairments, traumatic brain injury). Specific attention will be given to the etiologies and medical aspects of these diagnoses, their prevalence, and their characteristics. Instructional planning and assessment of student progress for these populations will be emphasized. Delivery approach will include, but not be limited to lecture, case study discussions, research papers, and text analysis. Prerequisites: Restricted to education majors. 3 credits.

**SPE 269. Positive Behavioral Supports - Evidence Based Behavioral Intervention and Prevention.** This course will begin with study of behavior theories and researchers, as well as principles of applied behavior analysis. Students will learn how to use functional assessment of student behavior to hypothesize the functions of behavior and to plan appropriate and positive interventions. Students will learn how to measure and record behavioral data. Focus will be on prevention of problem behavior as well as how to manage challenging behaviors, both from a classroom and a school wide perspective. Delivery approach will include, but not be limited to lecture, case study applications, field experiences, lesson plans, and research papers. 3 credits.

**SPE 360. Intensive Language Arts Intervention Approaches.** The focus of this course content will be on intensive language arts interventions for those students with disabilities who need systematic, direct instruction in order to become competent readers and writers. A variety of literacy programs will be examined, as well as language arts strategies and approaches which have been found effective for struggling readers. The requirements for a writing process course will be fulfilled through a case study paper and a research paper. Delivery approach will include, but not be limited to case study papers, research papers, student presentations, simulations, field experiences, hands-on experience with various literacy programs, and lesson plans. Prerequisites: Restricted to education majors. 3 credits.

**SPE 363. Assessment in Special Education.** This course will involve an in-depth examination of assessment, to include universal screenings, diagnostic assessments to diagnose disabilities, authentic assessments, and benchmark, formative, and summative tools. Students will practice administering and scoring various assessments. They will analyze student progress data and use that data for writing IEP goals and for instructional planning. Delivery approach will include, but not be limited to text analysis, field experiences, case study analyses, and hands-on experience with various assessments. Prerequisites: Restricted to education majors. 3 credits.

**SPE 366. Collaboration and Communication - Advocacy, Leadership, and Ethical Practice.** This course will begin with an examination of the professional and ethical standards expected of both general and special educators. Review of special education legislation and litigation will be conducted as it relates to safeguarding student health and welfare and in order that special education certifiers will have the knowledge to effectively advocate on behalf of their students with disabilities. In addition, collaboration and communication skills will be practiced and further developed through co-teaching opportunities and participation on special education teams. Delivery approach will include, but not be limited to field experiences, class discussions, simulations, and reflective writing. Prerequisites: Restricted to education majors. 3 credits.

**SPE 441. ECE Special Education Student Teaching.** Each ECE/SPE dual major will spend eight weeks in a stand-alone special education environment in an area school under the supervision of a carefully selected cooperating teacher. Open to seniors or students who are seeking certification only. Fulfills requirement: Immersive Experience. Prerequisite: Completion of all courses in the ECE/Special Education Dual Major, cumulative GPA at or above the minimum GPA specified by PDE for the PreK-4 Early Childhood Education certificate, completion of all Chapter 354 and Act 49-2 course requirements. 6 credits.

## GRADUATE COURSES

- ACT 601.CPA Review: Financial Accounting and Reporting.** This P/F course provides CPA Exam preparation for the Financial Accounting & Reporting section of the CPA Exam. Graded pass/fail. Prerequisite: Successful completion of B. S. Accounting - Accelerated Track. 1 credit.
- ACT 602.CPA Review: Auditing and Attestation.** This P/F course provides CPA Exam preparation for the Auditing & Attestation section of the CPA Exam. Graded pass/fail. Prerequisite: Successful completion of B. S. Accounting - Accelerated Track. 1 credit.
- ACT 603. CPA Review: Regulation.** This P/F course provides CPA Exam preparation for the Regulation section of the CPA Exam. Graded pass/fail. Prerequisite: Successful completion of B. S. Accounting - Accelerated Track. 1 credit.
- ACT 604. CPA Review: Business Environment and Concepts.** This P/F course provides CPA Exam preparation for the Business Environment and Concepts section of the CPA Exam. Graded pass/fail. Prerequisite: Successful completion of B. S. Accounting - Accelerated Track. 1 credit.
- ATR 602.Overview of Professional Practice.** This course is designed to provide the student with an appreciation of the field of athletic training and sport medicine in today's society. Historical perspectives and evolution of athletic training, as a profession, will be covered. The role of the athletic trainer, relationships with other health care professionals, and various practice settings will be discussed. Students will also be introduced to the professional standards of the National Athletic Training Association (NATA), Pennsylvania state organization (PATS), Board of Certification (BOC), and licensure and continuing education requirements. 1 credit.
- ATR 611.Human Anatomy.** This course is a comprehensive hands-on exploration of the human body, with emphasis on neuromusculoskeletal systems. Structural interrelationships shall be examined as the basis for human movement and as a means to understand abnormalities in structure and function. Directed laboratory experiences are focused on cadaver dissection. Learning is facilitated through textbooks, anatomical models, and audiovisual material. The case examples weaved throughout the course fosters clinical application of knowledge to physical therapy and athletic training practice. Prerequisites: GPA greater than 3.0 5 credits. [This course is cross-listed with PHT 611]
- ATR 612.Fundamental Skills of Athletic Training.** This course will provide an overview of the basic skills associated with the practice of athletic training. Emphasis will be placed on observational skills, introduction to tests and measures, and instrumentation utilized in the practice and research environments. 2 credits.
- ATR 613. Introduction to Clinical Skills Development.** This course is designed to provide students with the necessary practice environment to refine their knowledge, skills, and abilities specific to athletic training. This course will interconnect the information from courses taught previously and concurrently. Prerequisite: ATR 611.1 credit.
- ATR 614. Pathophysiology and Pharmacology.** Examines basic human pathology and medical principles, including, but not limited to, inflammation, infection, systemic conditions, diagnostic imaging, genetics, and clinical laboratory tests. 3 credits.
- ATR 616. Biomechanics and Kinesiology.** Examines tissue and joint structure and function, and the mechanical principles involved in human motion. The laboratory portion will introduce students to the basics of postural and gait assessment. Prerequisite: EXSC 311.4 credits. [This course is cross-listed with PHT 616]
- ATR 618. Prevention and Care of Emergency Medical Conditions.** This course is designed to provide students with the knowledge and skills necessary to recognize and respond appropriately to cardiac, breathing, mass casualty, and other injuries/illnesses that require emergent care. Students will also be introduced to policies and procedures associated with blood borne pathogens, asthma inhalers, and epinephrine administration. A laboratory component will address the implementation, procedures, and testing of procedures studied. 3 credits.
- ATR 624. Clinical Skills Laboratory I.** This course is designed to provide students with the necessary practice environment to refine their knowledge, skills, and abilities specific to athletic training. This course will interconnect the information from courses taught previously and concurrently. Topics to be covered will primarily stem from the following courses: Fundamental Skills & Prevention Strategies in Athletic Training, Prevention & Care of Emergency Medical Conditions, Musculoskeletal Assessment & Diagnosis I, Biomechanics & Kinesiology, and Overview of Professional Practice. This course is designed to be interactive and student-centered to allow for students to apply and practice their clinical skills. Simulation and standardized patient encounters will be utilized to create real-world experiences whenever possible. Skill practice and refinement in this course will prepare students to transition to the following semester's clinical practice course. Prerequisite: ATR 618. 1 credit.
- ATR 626. Clinical Skills Laboratory II.** This course is designed to provide students with the necessary practice environment to refine their knowledge, skills, and abilities specific to athletic training. This course will interconnect the information from courses taught previously and concurrently. Topics to be covered will primarily stem from the following courses: Clinical Skills Lab I, Musculoskeletal Assessment & Diagnosis II, Therapeutic Intervention I, and Pathophysiology & Pharmacology. This course is designed to be interactive and student-centered to allow for students to apply and practice their clinical skills. Simulation and standardized patient encounters will be utilized to create real-world experiences whenever possible. Skill practice and refinement in this course will prepare students to transition to the following semester's clinical practice course. Prerequisite: ATR 624. 1 credit.
- ATR 628. Musculoskeletal Assessment and Diagnosis I.** First of a two-course sequence providing an in-depth study of the evaluation, assessment, and treatment methods used in the management of musculoskeletal pathology and/or injury. 4 credits. [This course is cross-listed with PHT 728]
- ATR 630.Clinical Epidemiology: Patient-Centered Outcomes and Evidence-Based Practice.** This course will introduce the student to important concepts commonly used in clinical epidemiology. This includes common measures of disease/injury frequency, risk association, sensitivity, specificity, numbers needed to treat, and other clinical measures. Special emphasis will be placed on measuring patient-centered outcomes and applying principles of evidence-based practice in the clinical setting. This course is applicable to all graduate level exercise science majors. 2 credits.
- ATR 632.Musculoskeletal Assessment and Diagnosis II.** Second of a two-course sequence providing an in-depth study of the evaluation, assessment, and treatment methods used in the management of musculoskeletal pathology and/or injury. Prerequisite: ATR 628. 4 credits. [This course is cross-listed with PHT 732]

**ATR 634. Therapeutic Interventions I.** This course, being the first of a two-part sequence, is designed to prepare the student to implement various therapeutic interventions to effectively treat disorders of the musculoskeletal system. Emphasis in this course will be placed on pain and pain control, principles of tissue healing, concepts of rehabilitation, psychological aspects of injury and rehabilitation, thermal and electrical modalities, principles of low-level lasers, manual techniques and implementation of rehabilitation principles and exercises. Laboratory sessions will allow students to practice the application of skills learned in the lecture setting. 4 credits.

**ATR 652. Research Methods I.** This is the first course of evidence-based coursework related to the role of clinical research in the athletic training profession. This course includes conceptual and computational applications associated with the common statistical techniques relevant to sports medicine clinicians. The intent is to provide students with an introduction to frequently used descriptive and inferential statistical methods for clinical or research purposes in sports medicine. 2 credits. [This course is cross-listed with EXSC 452]

**ATR 661. Athletic Training Clinical Practice I.** This is the first of a five series progression of athletic training experiences with respect to various clinical settings and experiences. Each experience will reflect the integration and clinical application of didactic and laboratory experiences in line with concurrent academic course progression. Clinical education experiences will familiarize students with athletic training policies and procedures, sports and safety equipment and evaluation/intervention strategies. There will also be opportunities to apply clinical skills related to examination, therapeutic interventions, first aid, and emergency assessment and management. 2 credits.

**ATR 662. Athletic Training Clinical Practice II.** This is the second of a five series progression of athletic training experiences with respect to various clinical settings and experiences. Each experience will reflect the integration and clinical application of didactic and laboratory experiences in line with concurrent academic course progression. Clinical education experiences will familiarize students with athletic training policies and procedures, sports and safety equipment and evaluation/intervention strategies. There will also be opportunities to apply clinical skills related to examination, therapeutic interventions, first aid, and emergency assessment and management. Prerequisite: ATR 661 (with a grade of "B" or higher) 2 credits.

**ATR 677. Study Abroad in China: Perspectives from Traditional Chinese Medicine.** This course is a 10-day study abroad program available to students enrolled in upper level Health Professions classes. Students will stay in Beijing, China at Beijing Sport University. While there, students will be taught aspects of traditional Chinese Medicine (TCM) by Chinese faculty at the University in subjects such as cupping, acupuncture, Chinese massage, and TaiChi. During this time, students will be engaging socially with their Chinese peers at the University. In addition, students will visit local cultural sites such as the Great Wall, Forbidden City, and Tiananmen Square. The primary purpose of the class is to improve student's cultural competence and encounter alternative possibilities to western medicine in the areas of healthcare and wellness. This course may be repeated for credit as topic changes. Fulfills requirement: Immersive Experience. Application through the Center for Global Education required. 1 credit. [This course is cross-listed with EXSC 377]

**ATR 727. Clinical Skills Laboratory III.** This course is designed to provide students with the necessary practice environment to refine their knowledge, skills, and abilities specific to athletic training. This course will interconnect the information from courses taught previously and concurrently. Prerequisite: ATR 626. 1 credit.

**ATR 729. Clinical Skills Laboratory IV.** This course is designed to provide students with the necessary practice environment to refine their knowledge, skills, and abilities specific to athletic training. This course will interconnect the information from courses taught previously and concurrently. Prerequisite: ATR 727. 1 credit.

**ATR 734. Therapeutic Interventions II.** This is the second of a two-part sequence designed to prepare the student to implement various therapeutic interventions to effectively treat disorders of the musculoskeletal system. Emphasis in this course will be placed on various types of therapeutic exercises and their progressions, including plyometric, sports-specific training, functional training, and injury prevention via proper biomechanical strategies. Pre-participation athletic screening procedures and techniques will also be included. Laboratory sessions will allow students to practice the application of skills learned in the lecture setting. Prerequisite: Take ATR-634. 4 credits.

**ATR 736. Optimizing Athletic Performance Management in Sports Participants.** This course is designed to provide the student with safe, appropriate and legal strategies to optimize sports performance. Topics such as sport specific training, glycogen loading, peaking, diet, hydration, and supplements will be covered. Adverse reactions to optimal performance, including overtraining will also be included. 3 credits.

**ATR 744. Administration and Management in Athletic Training.** This course provides an introduction to administrative and management procedures associated with the various occupational settings for athletic trainers. 2 credits.

**ATR 746. Psychological Aspects of Health, Injury, and Performance.** This course provides the student with an understanding of an athlete's mindset in choosing to participate in unhealthy practices to enhance performance. Discussion of motivating factors to training and performance, and the adverse effects of depression, anxiety, self-esteem, and parental/peer pressures will also be studied. 2 credits.

**ATR 750. Seminar in Athletic Training.** This course serves as a formal review for the national Board of Certification, Inc. examination for certification as an athletic trainer. Students will also discuss current professional issues pertinent to their entrance into the profession as practicing clinicians. 2 credits.

**ATR 752. Research Methods II.** This course is the second in a sequence of evidence-based coursework related to the understanding of clinical research and its application to the development and justification of treatment interventions that are implemented in various injuries and pathologies that occur in the athletic population. Emphasis in this course will be placed on critiquing clinical research articles, and peer discussion of articles using a journal club format. 2 credits.

**ATR 760. Athletic Training Clinical Experience III.** This is the third of a five series progression of athletic training experiences with respect to various clinical settings and experiences. Each experience will reflect the integration and clinical application of didactic and laboratory experiences in line with concurrent academic course progression. Clinical education experiences will familiarize students with athletic training policies and procedures, sports and safety equipment and evaluation/intervention strategies. There will also be opportunities to apply clinical skills related to examination, therapeutic interventions, first aid, and emergency assessment and management. Prerequisite: ATR 662 (with a grade of "B" or higher) 2 credits.

**ATR 762. Athletic Training Clinical Experience IV.** This is the fourth of a five series progression of athletic training experiences with respect to various clinical settings and experiences. Each experience will reflect the integration and clinical application of didactic and laboratory experiences in line with concurrent academic course progression. Clinical education experiences will familiarize students with athletic training policies and procedures, sports and safety equipment and evaluation/intervention strategies. There will also be opportunities to apply clinical skills related to examination, therapeutic interventions, first aid, and emergency assessment and management. Prerequisite: ATR 760 (with a grade of "B" or higher) 3 credits.

**ATR 764. Athletic Training Clinical Experience V.** This is the fifth of a five series progression of athletic training experiences with respect to various clinical settings and experiences. Each experience will reflect the integration and clinical application of didactic and laboratory experiences in line with concurrent academic course progression. Clinical education experiences will familiarize students with athletic training policies and procedures, sports and safety equipment and evaluation/intervention strategies. There will also be opportunities to apply clinical skills related to examination, therapeutic interventions, first aid, and emergency assessment and management. Prerequisite: ATR 762 (with a grade of "B" or higher) 4 credits.

**EDU 840. Introduction to Designing Online Environment.** This project-based course will introduce participants to various aspects of online learning environments with a focus on asynchronous learning. Learners will investigate standards, instructional best practices and online design techniques to build an environment that creates a sense of community and encourages collaboration and engagement. The course will include a focus on how to differentiate instruction to meet all learners' needs in an asynchronous manner of delivery. Participants will clearly convey how instructional practices, relevant skills and competencies inform their online program design and be able to communicate where and when online learning techniques can enhance traditional instructional models. 3 credits.

**EDU 841. Delivering Effective Online Instruction.** This course will examine methods for delivering online instruction in various environments with a focus on synchronous learning. Participants will review the Teacher Effectiveness Model of Supervision and evaluate the model with regard to aspects of online delivery. The course will focus on planning live instruction that encourages learners' active participation, application, interaction and collaboration. Participants will explore setting clear expectations, professionally delivering instruction and providing meaningful feedback. The course will include components on how to differentiate synchronous instruction to meet all learners' needs. Participants will be able to articulate when and why synchronous learning is the most effective delivery of the content. 3 credits.

**EDU 842. Assessing Online Learning.** Learning online provides unique opportunities for educators to gather data on their learners' progress and mastery. This course will explore programs and tools that can be used to design engaging and individualized assessments. It will focus on best practices in lesson design that promotes formative assessment. Time will be dedicated to ensuring the validity and reliability of student work. Participants will craft assessments that produce data needed to direct instruction and individualize the learning experience. Prerequisites: EDU 840 and 841. 3 credits.

**EDU 843. Professional Responsibilities in an Online Learning Environment.** This course will investigate the skills needed to safely and successfully engage in an online world. Students will research digital citizenship skills designed to help learners appropriately participate as online community members. Participants will evaluate media and digital literacy skills that help learners assess the validity of information available online. The course will investigate policies that keep people and information safe. Time will be spent analyzing aspects of academic integrity as well as ethical and professional behaviors necessary for consuming and producing information in a global society. Through Virtual Field Experiences candidates are exposed to various online learning situations and school settings. This course also serves as the capstone course which requires the candidate to demonstrate how they have synthesized and applied the program instruction in the realworld context. Prerequisite: EDU 840, 841, and 842. 3 credits.

**EXSC 702. Advance Topics: Strength and Conditioning and Sport Science.** This course examines the theoretical understanding of the principles of exercise testing and prescription, and provides an opportunity to engage in advanced fitness profiling and core concepts of exercise prescription aimed to improve fitness and health outcomes. The course will also provide opportunity to develop advanced skills required to administer alternative modalities of health/fitness assessments and to further develop problem solving, decision-making, and communication skills. 4 credits.

**EXSC 710. Advanced Exercise Physiology.** This course focuses on integrative physiology and physiological responses to exercise including an overview of major organ systems and cellular metabolism during exercise, and physiological aspects of fatigue and factors influencing physical working capacity and performance. 3 credits.

**EXSC 715. Clinical Ex Physiology.** This course explores the concept of clinical exercise physiology across various clinical populations. Emphasis is placed on methods of evaluating cardiovascular function through graded exercise tests as well as principles of exercise prescription. Theoretical as well as practical course work cover administrative aspects of testing, metabolic calculations, variety of testing protocols, exercise physiology and exercise prescription. 3 credits.

**EXSC 716. Applied Methods in Human Performance.** This course explores advanced exercise performance testing methods. This course examines skeletal muscle structure and function and cardiovascular, respiratory, and neuro musculoskeletal physiology during exercise in general and special patient/client populations. Current methods of nutritional and physical assessment will be evaluated. 3 credits.

**EXSC 718. ECG Interpretation.** This course focuses on the analysis of the 12 Lead ECG in relation to physiological events and various disease states including conduction abnormalities, and their clinical significance. 3 credits.

**EXSC 719. Applied Methods of Biomechanics.** This course emphasizes the development of the analytical skills necessary to perform comprehensive kinematic and kinetic movement analysis in healthy and patient populations. Students will focus on understanding and applying numerical methods of analysis, motion capture, electromyography, and inverse dynamics modeling. Upon completion, the student will have the skills necessary to measure and analyze human movement in clinical and laboratory settings. 3 credits.

**EXSC 720. Statistics I.** This course provides foundational instruction in descriptive and inferential statistics. Topics include organizing data, descriptive measures, basic probability and random numbers, normal distributions, sampling, confidence intervals, hypothesis tests, non-parametric tests, and Chi-Square procedures. 3 credits.

**EXSC 722. Statistics II.** This course provides instruction in multivariate statistical methods. Topics include linear regression, correlation, ANOVA, multiple regression, and model building. Prerequisite: EXSC 720.3 credits.

**EXSC 729. Biomechanics of Sport.** This course emphasizes the development of the analytical skills necessary to perform comprehensive kinematic and kinetic movement analysis for athletic activities. Upon completion, the student will have the skills necessary to assess and analyze athletic performance, and to implement developmental strategies to improve performance. 3 credits.

**EXSC 730. Foundations of Rehabilitation Science.** This course provides an overview of the field of rehabilitation science and an introduction to the constructs of injury and disability across the life span with emphasis on current rehabilitation research. 3 credits.

**EXSC 740. Computer Analysis Methods.** This course prepares students to process, analyze, and present data collected in research or industrial settings with industry-standard computer data collection systems using two common biomechanics software programs, Matlab and Visual3D. Students will learn how to process 3D motion capture, force plate and EMG data, perform typical calculations required in biomechanical reporting, and produce graphics for publication or presentation. 4 credits.

**EXSC 742. Pharmacology.** This course evaluates the impact of medications, supplements, and substances on exercise physiology, exercise performance, cardiopulmonary fitness, and weight management. Students will master general pharmacokinetic and pharmacodynamic concepts and learn specific medication properties. Through critical evaluation of primary literature, students will classify medications as ergogenic or ergolytic to review and revise exercise and nutrition recommendations. 3 credits.

**EXSC 749. Sport Psychology.** This course examines psychological theories and research related to sport and exercise behavior. A broad range of topics are discussed that are applicable to different career paths in exercise science and allied health professions. 3 credits.

**EXSC 752. Research Methods I.** The evidence-based coursework relates to the role of clinical research in exercise science professions. This course includes conceptual and computational applications associated with the common statistical techniques relevant to exercise science or sports medicine clinicians. The intent is to provide students with an introduction to frequently used descriptive and inferential statistical methods for clinical or research purposes in exercise or sports science. 2 credits.

**EXSC 754. Seminar in Human Performance.** This seminar consists of online presentations, readings, discussions and projects where research and other relevant topics in exercise science are presented by faculty, students, and guest presenters. This course also provides a forum in which the scientific bases underlying research in exercise science can be critically discussed. This course may be repeated for credit as topic changes. 1 credit.

**EXSC 900. Internship.** Students will undertake a 600 hr. internship in areas such as industrial, human performance, or medical research/clinical facilities. During the internship, students will engage in human performance assessment, protocol or equipment development, and/or research activities commensurate with the facility while gaining valuable work experience. Graded pass/fail. This course may be repeated for credit as topic changes. Prerequisite: Completion of all prior coursework. 1-6 credits.

**EXSC 910. Thesis.** Students will plan and execute an original research project under the guidance of a faculty advisor. This includes establishing a plan of study, developing the experimental design, learning necessary technical and academic skills, critically reviewing relevant literature in human performance, collecting processing and analyzing data, assembling results for presentation and/or publication, and defending the scientific merits before their thesis committee. Graded pass/fail. This course may be repeated for credit as topic changes. Prerequisite: Completion of all prior coursework. 1-6 credits.

**MBA 801. Introduction to Healthcare Management.** The course examines the history of medicine; healthcare delivery systems such as acute hospital care, chronic care, outpatient systems, and long term care; healthcare professions and medical education; US and World healthcare systems; health insurance, healthcare financing and payers; employee based coverage compared to government coverage; public health; and healthcare technology and innovation and its cost. The course provides an introduction to management across functions in a healthcare organization. 3 credits.

**MBA 802. Ethical, Legal, and Regulatory Issues in Healthcare.** This course introduces students to the legal, regulatory, and ethical issues they are likely to face in managing a healthcare organization. With the increasing intersection between healthcare delivery and law, healthcare managers will encounter a wide range of legal and regulatory issues, including patients' rights, antitrust, institutional liability, privacy, security and reimbursement. It is thus important for students to be familiar with basic legal principles affecting how healthcare institutions operate, how legal rules and doctrine are formulated, and how to interact effectively with attorneys. 3 credits.

**MBA 805. Financial Policy.** A quantitative and qualitative approach to managerial problems of short and long term financing, asset management, and dividend policies, to advance the understanding of financial concepts, policies, theories and tools to make investment and financing decisions. Emphasis placed on the application of experience to class discussion through problem solving. The primary objective of this course is to be able to evaluate investment opportunities, understand the various sources of financing and its impact on the firm's structure. Must satisfy Finance prerequisite. 3 credits.

**MBA 807. Innovation.** Why are some companies considered innovative and others stodgy? What cultural, organizational, and personal elements make innovation in technology possible? This course attempts to answer these questions by exploring how technology ideas are created, fostered, and shared. The course will study innovation from both theoretical and applied perspectives using case studies, creative exercises, research, and simulations as learning experiences. 3 credits.

**MBA 810. Organizational Behavior.** Utilizing an experiential case study method, this course surveys the evolution of theory and research in the areas of organization behavior. Learning topics include motivation theory, group dynamics, leadership, decision-making, conflict transformation, emotional intelligence and communication. The course affirms a systemic perspective and approach to organizational behavior, a systematic presentation of theory and research in areas of organizational behavior; including motivation, group dynamics, leadership, decision-making, organization change, career planning, and communication. Must satisfy Organizational Behavior prerequisite. 3 credits.

**MBA 815. Marketing Management.** A focus on issues in the interplay between marketing and society including the ethics of selling, advertising, marketing research, and the social responsibility of marketers. An understanding of the role of marketing in businesses and not-for-profit

organizations and its importance for individuals within a society. Discover how marketing interfaces with domestic and global environments. Understand consumer and organizational buyer behavior for identifying market opportunities, segmenting and targeting markets, and developing positioning strategies. Must satisfy Marketing prerequisite. 3 credits.

**MBA 816. Internet Marketing.** The course examines the principles and processes of Internet Marketing. Students will examine current topics including search engine advertising; social media, online advertising strategies and models; metrics, and ethics. The course will also integrate a comparison and contrast of online promotion to traditional channels and extensively employ case studies. 3 credits.

**MBA 817. Business and Technology.** This course examines the role technology plays in collaboration and knowledge management in business organizations. The class will present both theoretical and applied concepts, including organizational knowledge models, knowledge exchange, collaboration tools, Communities of Practice, and Web 2.0. Case studies are employed to build critical thinking skills, especially for a recurring analysis of the complex relationship between people, information, and IT. 3 credits.

**MBA 825. Executive Communications.** Executive Communications focuses on the communication skills that managers at all levels must acquire, develop and demonstrate in order to achieve success in the workplace. The course combines communication theory with practical techniques for conveying information; for motivating associates and enhancing teamwork via the spoken and written word; and for exhibiting leadership through language at the interpersonal, small group and organizational levels. Organizational communications skills, emphasizing writing, speaking and listening techniques and interpersonal communication are included. Recommended as one of the first three courses taken in the MBA program. 3 credits.

**MBA 827. Project Management.** Project Management is "the application of knowledge, skills, tools and techniques to project activities to meet project requirements," as defined by the Project Management Body of Knowledge (*PMBOK*®). The course provides students an introduction to the five process groups of project management, the nine knowledge areas of project management, and the Project Management Institute (PMI®). Introduces appropriate project management computer software. 3 credits.

**MBA 830. Healthcare Informatics.** This course covers the application of health care information systems and implementation of information technology in health care organizations. The course introduces key terms and concepts surrounding data, information, regulations, laws, and standards in the healthcare industry. The course explores the processes that drives healthcare system selection, acquisition, and the related management challenges. Additionally, there is a focus on implications of information technology in healthcare as well as covering leadership and strategy as it relates to the healthcare industry. 3 credits.

**MBA 832. Management Information Systems.** This course addresses key issues associated with the management of enterprise-level technology and information systems. Topics include creating business intelligence, using technology for competitive advantage, building and using relational databases, creating and using decision support systems, exploring strategies for e-commerce, understanding systems development, designing and managing networks, protecting information systems, and examining and evaluating emerging technologies. Must satisfy the Management Information Systems prerequisite. 3 credits.

**MBA 833. Managerial Economics.** This course studies the role of economic theory in management analysis and decisions. The study of demand, cost, and supply theories from a business viewpoint are also covered. This course is about economic principles and their relevance to business decision-making. It will explore the interaction of information, economic incentives and market competition and how these interact to determine prices, products available, profits, and patterns of trade and organization. At the end of this course students should be able to understand how basic economic reasoning can improve managerial decisions. Must satisfy Economics (Micro and Macro) prerequisite. 3 credits.

**MBA 837. Project Management: Planning and Scheduling Management.** The purpose of this course is to develop advanced level understanding of planning and scheduling management knowledge in the context of project management. Using the Project Management Body of Knowledge (PMBOK), students will learn core concepts and principles of planning and scheduling management, as well as the application of various methods, tools and techniques commonly used to manage organizational projects. 3 credits.

**MBA 840. Business Analytics.** This course reviews the quantitative techniques and systems approaches that managers need to make effective decisions for their organization. A philosophy of problem solving will be introduced as well as systems thinking and the use of models in solving business problems. Emphasis is placed on analyzing and critically evaluating data to inform managerial decision-making. Topics include supply chain management and control of inventory, forecasting, and quality management. Appropriate computer software is used. 3 credits.

**MBA 845. Managing Operations and Business Processes.** Business decisions are made with consideration of the resources available, costs (both internal and external) and the impact on all stakeholders of an organization. This course provides the knowledge and skills that managers use in describing and understanding, measuring and analyzing, and developing plans for changing the operating process to best serve those interests. Tools such as including Queuing models, Simulations and Linear Programming applications will be employed. Decisions regarding the best use of limited resources, staffing requirements, and facility location/layout are featured. Must satisfy Operations prerequisite. 3 credits.

**MBA 847. Sales Management.** This course will utilize an experiential case study method, this course critically examines the role of sales management in crafting and executing business strategy. Emphasis is placed on the functions of a sales manager, including the planning, execution, and control of a sales force. Topics are investigated using case study, discussions, and analytical and hands on exercises. 3 credits.

**MBA 850. Human Resource Management.** A survey of personnel management activities in organizations including exploration of recent developments in the field of human resource management. Topics include human resource planning, recruitment, selection, training, equal employment opportunity, performance appraisal, discipline, career planning, compensation, safety, and health. Instruction method includes case study, readings. 3 credits.

**MBA 851. Training and Development.** This course examines the various approaches to management training and development. How to administer effective training programs, as well as the relationship of technology and training theories are addressed. In addition, other key elements including needs assessment, program development, and program evaluation are covered. 3 credits.

**MBA 852. Negotiation, Conflict Resolution, and Creative Problem Solving.** This course explores essential strategies for negotiation and conflict resolution with a focus on creative problem solving strategies. The overall processes as well as specific methods for difficult situations will be

covered. Emphasis will be placed on real-world applications as students learn to assess their current skill level and identify areas for improvement. Students will leave the course with the tools necessary to increase their influence in a variety of situations. 3 credits.

**MBA 855. Legal Environment of Business.** Legal concepts and principles important to business decision making including employment law, labor-management relations and relevant legislation, tax consequences of business transactions, government regulation, contract law, and application of the Uniform Commercial Code to business transactions are examined utilizing case studies, readings, and discussions. 3 credits.

**MBA 856. Corporate Governance.** This course examines the importance of the proper governance of business entities. We know that business leaders are scrutinized and often held personally responsible for the actions, or lack of actions, of their companies or non-profits. Through case studies and class discussions, the course evaluates and analyzes past problems seen in corporate governance and tactics for avoiding future issues. This course helps students recognize governance issues and develop strategies to make appropriate business decisions. 3 credits.

**MBA 857. Supply Chain Management.** This course takes a strategic, managerial, and cross-functional view of supply chain management, enabling managers to participate in the vision and implementation of world-class supply chain networks. To achieve this, the course introduces a Supply Chain Roadmap process model as a guiding framework for designing and implementing integrated supply chains. Students will gain the knowledge and analytical tools to perform analysis and act as change agents within their organizations. 3 credits.

**MBA 859. Forensic Accounting.** What do you get when you mix psychology, criminology, computer forensics and accounting? You get an exciting, first-hand view of forensic accounting and fraud examination. This course will examine the motives for committing fraud, common methods for detecting fraud and techniques used in investigating fraud. We will explore theory, as well as follow an actual case from detection to prosecution. 3 credits.

**MBA 860. International Business Management.** The theories, concepts, practices, and techniques of conducting business in foreign countries. The strategic issues, the operational practices, and the governmental relations of multinational companies are analyzed through the use of case studies, videos, lectures, the development of an international strategic plan, and an international trade game. Topics include economic, political, and cultural integration; trade restrictions and barriers; overseas investment and financing; entry into foreign markets and marketing strategies. 3 credits.

**MBA 865. Entrepreneurship.** Entrepreneurship, intrapreneurship, small business, and acquisitions. Special attention to entrepreneurial behavior, sources of funding and actual case studies in the development of new enterprises. 3 credits.

**MBA 867. Project Management: Risk and Quality Management.** The primary goal of this course is to develop advanced level understanding of risk and quality management. Using the Project Management Body of Knowledge (PMBOK), students will learn core concepts and principles of risk and quality management, as well as the application of various methods, tools and techniques commonly used to manage organizational projects. 3 credits.

**MBA 869. CFO - Lessons in Financial Leadership.** At times it appears that the life of a CFO looks like a "jack-of-all-trades and a master of none". In many companies, the CFO oversees not just the accounting department, but also human resources and information technology. All of this oversight is typically additional to the role of right hand of the CEO. This course will provide an overview of the role of the CFO in strategy and leadership. In addition, students will be exposed to the important function of due diligence. "Due diligence" can loosely be described as understanding, researching, and investigating a company's finances and operations, both historically and with an eye toward future value. This course is a high-speed, seminar-style course that seeks active participants. 3 credits.

**MBA 870. Labor Management Relations.** Directed primarily to the understanding of the issues and alternatives arising out of the work place. The course provides both an overview of what has been identified as industrial relations as well as familiarity with the tools used by its practitioners. Students will study negotiation, administration, wage/fringe issues, and contents of labor agreements. 3 credits.

**MBA 875. Accounting for Managerial Decision Making.** Provides students previously exposed to managerial accounting principles with the essential tools and strategies managers need to develop data for making decisions related to pricing strategy; product expansion, discontinuance or redesign; performance measurement; resource allocation and management; merger and acquisition planning; and other types of managerial decisions. Stresses ways to avoid mistakes that result when internal decision-making is based on data developed for external financial reporting. Business topics covered include financial statement analysis, responsibility accounting, Economic Value Added (EVA), and Activity Based Costing (ABC). Must satisfy Accounting prerequisite. 3 credits.

**MBA 877. Introduction to Logistics.** This course takes a strategic, managerial, and cross-functional view of logistics, enabling practitioners to participate in the creation and implementation of real-world logistics systems. To achieve this, the course introduces logistics theory and a "best practices" approach to what is current in business and industry today. 3 credits.

**MBA 879. Advanced Taxation.** This course leverages knowledge of individual and entity taxation. Students will be exposed to the importance of taxation planning in business decision making. Accountants must be business partners in the "C-Suite". Topics include Estate and Trust Taxation, International Taxation, and Taxation of Business Combinations. Additionally, students will explore the ethics around topics such as off-shoring and inversions. 3 credits.

**MBA 880. Investments and Portfolio Management.** Reviews the tools essential for sound money management. Considers the goals of the investor with respect to risk exposure, tax environment, liquidity needs and appreciation versus income potentials. Strategies will be developed to satisfy these objectives. Mathematical models of portfolio selection to help reduce risk through diversification will be developed. Special attention will be paid to the theories of determinants of asset prices, including the capital-asset pricing model. 3 credits.

**MBA 885. Ethical Leadership.** A focus on the examination of leadership theories and concepts and how to recognize, analyze, and resolve ethical dilemmas in our leadership roles. Through the use of case studies and self-analysis, students will assess: corporate social responsibility; the public and private morality of leaders; the moral obligations of leaders and followers; the ways in which leaders shape the moral environment of institutions; the temptations of power; and leader-follower interaction. 3 credits.

**MBA 886. Leadership: Theory and Practice.** The term leadership has been used in many forums, in many ways, and based on various definitions. This course is designed to develop the student's understanding of the concept of leadership and to help the student both understand their

leadership style and how to analyze leadership needs. Students will be able to be prescriptive of specific leadership styles as they relate to a given environment (e. g. business with hierarchical structure, organic type of business, professional atmosphere). To accomplish this, class time will focus on building a broad understanding of leadership theory and the key foundational pillars of leadership. Case studies and student workplace experiences will be used to apply theory to real world situations. 3 credits.

**MBA 887. Executive Decision Making.** The job of a leader is to provide motivation and direction to employees by aligning operational goals and objectives with organizational direction. In order to do this effectively, rational decision-making must be at the foundation of the process. This course provides students with the framework to analyze situations and develop/ recognize alternatives that align with the organization's culture and objectives. 3 credits.

**MBA 890.Special Topics.** This course option allows for the exploration of current topics in the field of business management. This course may be repeated for credit as topic changes. 3 credits.

**MBA 891.Special Topics in Healthcare Management.** This course option allows for the exploration of current topics in the field of healthcare management. This course may be repeated for credit as topic changes. 3 credits.

**MBA 892.Special Topics in Leadership and Ethics.** This course option allows for the exploration of current topics in the field of leadership and ethics. This course may be repeated for credit as topic changes. 3 credits.

**MBA 893. Special Topics in Project Management.** This course option allows for the exploration of current topics in the field of project management. This course may be repeated for credit as topic changes. 3 credits.

**MBA 894. Special Topics in Human Resource Management.** This course option allows for the exploration of current topics in the field of human resource management. This course may be repeated for credit as topic changes. 3 credits.

**MBA 895. Strategic Management.** Strategic Management is a capstone course to be taken near or at the completion of the MBA program. Strategic Management is designed to tie together and integrate all the business courses taken by challenging students to look at a total organization and what it must do to compete successfully in its environment. This course includes an examination of the many principles and techniques used today in strategy formation and implementation. Case studies will be used extensively throughout the course to enhance understanding of strategy concepts and practices. Also included is the strategic management of large and small business entities, including the formulation and evaluation of missions, strategies, objectives, and policies. Historical and current situations are discussed. Cases are widely used and outside research is required. Prerequisite: At least 24 hours of graduate credit. Must satisfy Strategic Management prerequisite. 3 credits.

**MBA 897. Special Topics in Supply Chain Management/Logistics.** This course option allows for the exploration of current topics in the field of supply chain management/logistics. This course may be repeated for credit as topic changes. 3 credits.

**MBA 900.Internship.** Practical, professional work experience related to the student's career interests and academic studies involving both organizational/on-site and faculty supervision. Students may complete up to two internship experiences for credit or not-for-credit during pursuit of the MBA Degree, with a maximum of 3 credits per internship (6 credits total). A minimum of 60 hours per credit will be required for students seeking credit for their internship. Graded pass/fail. May be repeated for credit (up to 6 credits of internship may be counted toward the degree). 0-3 credits.

**MME 801.Foundations of Music Education.** A consideration of philosophical and historical issues in music education and their implications for developing curricular and instructional approaches to the field. A core course. 3 credits.

**MME 802.Research Methods in Music Education.** A study in the organization, presentation, interpretation, and documentation of research that makes use of encyclopedias, indices, databases, and other aids. A core course. 3 credits.

**MME 803. Technology for Music Educators.** An exploration of how technology can enhance the music learning process. This course examines what is involved in planning, configuring, and teaching various technology systems and applications so as to facilitate creative interaction with musical experiences. A core course. 3 credits.

**MME 804. Psychology of Music Learning.** An investigation and discussion of theories of learning as they relate to the teaching of music. This course includes the study of specific teaching strategies and the nature of musical response. A core course. 3 credits.

**MME 805. Project.** Project capstone. Graded pass/fail. This course may be repeated for credit as topic changes. 1-3 credits.

**MME 806. Thesis.** Thesis capstone. Graded pass/fail. This course may be repeated for credit as topic changes. 1-3 credits.

**MME 830.Private Applied.** Up to a maximum of 3 elective credits in the program (including MME 840). 1 credit.

**MME 840.Private Applied.** Up to a maximum of 3 elective credits in the program (including MME 830). 2 credits.

**MME 850.Ethnomusicology.** This course is designed to explore musical dimensions across a variety of the world's musical cultures. 3 credits.

**MME 854. Topics in Music Theory and Analysis.** An intensive repertoire-driven review of harmony and formal structures using a variety of analytical techniques, drawing examples primarily from the western art music tradition. Repertoire selections will vary from year to year. 3 credits.

**MME 856. Orchestration and Arranging for Contemporary Ensembles.** Orchestration and arranging for educators working with a variety of contemporary instruments and ensembles including jazz and rhythm sections. Use of electronic notation software to create scores, parts, and audio representations of projects. Participation in in-class performance of arrangements. 2 credits.

**MME 857. Advanced Instrumental Conducting.** The students will develop advanced conducting techniques for the instrumental conducting professional. We will examine techniques that will help conductors express emotion more musically. These techniques will include: development of hand independence, musical gestures, communicative gestures incorporating baton, left hand, and facial techniques. There will also be learning activities designed to familiarize educators with the needs of individuals within ensembles and to help provide direction needed to help motivate groups to achieve their highest potential. 3 credits.

**MME 860. Modern Band Pedagogy.** This course will introduce students to the music as a second language pedagogy and provide an overview of Modern Band and the application of materials for teaching keyboard, guitar, drums and bass in the K-12 classroom. Corequisite: Take MME-861.1 credit.

**MME 861. Music of Modern Band.** Students will enhance their knowledge of repertoire performance from various popular styles; and learning rhythmic, melodic and harmonic practices associated with each genre. Corequisite: MME-860.1 credit.

**MME 862. Beginning Pedagogy and Methods for Guitar.** Students will learn the skills necessary to teach guitar in a popular music setting. "Music as a second language" will be the emphasized pedagogy. Students are required to meet a minimum proficiency on the guitar. Prerequisite: Take MME-860 and MME-861.1/2 credit.

**MME 863. Beginning Pedagogy and Methods for Drums.** Students will learn the skills necessary to teach drums in a popular music setting. "Music as a second language" will be the emphasized pedagogy. Students are required to meet a minimum proficiency on each instrument. Prerequisite: Take MME-860 and MME-861.1/2 credit.

**MME 864. Beginning Pedagogy and Methods for Electric Bass.** Students will learn the skills necessary to teach electric bass in a popular music setting. "Music as a second language" will be the emphasized pedagogy. Students are required to meet a minimum proficiency on each instrument. Prerequisite: Take MME-860 and MME-861.1/2 credit.

**MME 865. Beginning Pedagogy and Methods for Keyboard.** Students will learn the skills necessary to teach keyboard in a popular music setting. "Music as a second language" will be the emphasized pedagogy. Students are required to meet a minimum proficiency on each instrument. Prerequisite: Take MME-860 and MME-861.1/2 credit.

**MME 866. Beginning Pedagogy and Methods for Contemporary Vocal Styles.** Students will learn the skills necessary to teach the voice techniques in a popular music setting. "Music as a second language" will be the emphasized pedagogy. Students are required to meet a minimum proficiency singing in a contemporary genre. Prerequisite: Take MME-860 and MME-861.1 credit.

**MME 867. Creative Experiences in Modern Band.** The course is designed to give students the opportunity to analyze and create music in popular music styles and then apply appropriate strategies that will enable them to design creative experiences for students in K-12 settings. Students will be introduced to compositional strategies for creative experiences appropriate for upper-elementary and secondary aged students and design a series of creative experiences for this purpose. Prerequisite: MME 860, 861, 862, 863, 864, and 865. 1 credit.

**MME 870. Music for All: Teaching Music to Students with Exceptionalities.** This course will cover a range of topics pertaining to the teaching of music to K-12 learners with exceptionalities (special needs). 2 credits.

**MME 871. Music Identity and Music Education.** This course is designed to cover a broad spectrum of topics pertaining to musical identity as it intersects with music education. 3 credits.

**MME 872. Teaching Musicianship in Secondary Schools.** This course is designed to aid secondary school teachers in preparing, implementing, and effectively running music theory and ear training programs, or similar musicianship courses. 3 credits.

**MME 887. Recording for the Music Educator.** Whether you are trying to record your spring concert, grab a quick recording of a rehearsal for instant feedback, or help your students produce their own songs, we will spend lots of time exploring the various aspects of making a recording. The use of microphones, room acoustics, and equipment setup will be covered by... get this... actually recording. A lot! 3 credits.

**MME 888. Modern Band: Composition and Performance Ensemble.** This course serves as the capstone to the Modern Band Certificate. Students will expand upon the proficiencies and methods learned in an ensemble setting through collaborative composition and improvisation. The cumulating experience will be a live concert promoting the pedagogies for a modern band curriculum. Prerequisites: MME 860, 861, 862, 863, 864, and 865. 3 credits.

**MME 890. Special Topics.** Elective courses will be offered as special topics courses, (e. g., Teaching Choral Music, Teaching General Music, Teaching Instrumental Music, Theory for Teaching, Graduate Music History Seminar, Music in Early Childhood, Music and the Exceptional Child, Statistics for the Music Researcher, Conducting, Arranging [band scoring, choral arranging, jazz arranging]). This course may be repeated for credit as topic changes. 3 credits.

**MSE 801. Principles of Biology and Life Science.** This course addresses biology and life science concepts prevalent in virtually all science curricula, as well as those set forth in the National Science Education Standards. Students engage in the use of scientific methods to address topics typically taught in biology and life science courses. 3 credits.

**MSE 802. Principles of Chemistry.** This course utilizes concepts in chemistry to make connections to common substances. Establishing chemistry as an integral part of everyday life, as well as discoveries made by chance, will make this topic relevant to all students. 3 credits.

**MSE 803. Principles of Physics and Physical Science.** This course utilizes hands-on experimental methods to gain confidence and experience with inquiry-based learning of physics. Topics include motion, heat, light, electricity and magnetism. 3 credits.

**MSE 805. Principles of Earth and Space Science.** The interaction and effects of geology, meteorology, and space exploration will be explored in this course. Field study is combined with experimental inquiries from exemplary curricula to illustrate critical connections of physics, chemistry and biology with the earth sciences. 3 credits.

**MSE 806. Principles of Mathematics in a STEM Classroom.** This course is designed for K-12 educators, administrators, and informal educators as a rich and deep inquiry into mathematical concepts related to STEM curriculum. This course will include mathematical concepts that are developed through inquiry-based learning. Educators will then have the opportunity to develop hands-on and inquiry-based activities that can be implemented in their classroom to enable students to have a deeper understanding of Common Core eligible content. 3 credits.

**MSE 807. Principles of Technology and Engineering in a STEM Classroom.** This course is designed to empower K-12 educators, administrators, and informal educators to properly address engineering concepts within STEM. This includes an introduction to the curricular nature and signature pedagogies unique to engineering, technology, and the engineering design process. This course will also include an examination of state and

national standards to technology and engineering education, an investigation of related political, global, and economic trends and issues, and a review of technology and engineering education research. 3 credits.

**MSE 813. Literacy in the Science Classroom.** This course will explore the communication and reading literacy skills that K-12 students need in understanding science education and scientific literature. The course will provide students with opportunities to choose, apply, and evaluate writing, reading, and communication skills with their students by selecting appropriate materials and exercises that reflect the needs of a diverse population of students. The components of a balanced literacy curriculum - phonics, fluency, vocabulary, and comprehension - will be addressed as well as strategies to improve these skills in students weak in one or more of the components. Literacy skills that are unique to science will be explored, including learning to communicate in the language of science (charts, tables, data, maps, etc.). 3 credits.

**MSE 820.Seminar.** This course will permit some flexibility to explore current topics in elementary/middle school education as they arise. Seminar courses permit special topics to be included in the course of study. Recent offerings include literacy in science, forensics, and multimedia science. In addition, certain transfer courses may be valid for degree accreditation but may not be a complete match in the courses listed. May be repeated for credit. 1-3 credits.

**MSE 821.Exploration of STEM Careers.** Students will tour select local industries and organizations which utilize science, technology, engineering and mathematics (STEM) on a daily basis. The focus of the central PA tours will be to raise awareness of scientific applications that encompass STEM to produce or analyze a product or test samples. Students will be able to build partnerships with local industries which will enable them to connect industry directly into their classroom. Additionally, emphasis will be placed on safety and environmental concerns within the industrial setting. Students will be provided with time to query the various company representatives about specific applications to the classroom. Journal articles, reflective journals, and a culminating project are requirements of the course. 3 credits.

**MSE 822.Forensic Science to the Classroom.** In this course, students will read, research, hypothesize, interview, compute, and use deductive reasoning to propose solutions to crimes in an effort to develop hands-on, inquiry-based lessons for their K-12 students. Students will use forensic techniques such as lifting and inking fingerprints, shoe casting, and bite identification. Science, English, and Math Standards will be incorporated into this project-based course. 3 credits.

**MSE 823. Waterways: Water Chemistry, Biology, Environment, and Safety.** This course provides students with a field-based opportunity to study and monitor various habitats in an attempt to become more aware of our water resources. Students will compare and contrast various local waterway systems and synthesize data regarding overall health and water quality. 3 credits.

**MSE 824. Emerging Internet Technology.** This course will raise awareness and competence with ever emerging Internet technologies useful for education. Although the focus will be on science education application, students will find that these technologies can be applied in a variety of educational and personal contexts. The course will involve both instructor and student based sharing and presentations on technology. 3 credits.

**MSE 826. Watersheds and Wetlands: Citizen Science Inquiry and the Atlantic Horseshoe Crab.** Population studies, data collection, investigation, analysis, problem solving, and developing an action plan are all key to conducting citizen science. This course embraces the amazing story of the horseshoe crab in modern medicine, in the fisheries industry, in the food chain, in tourism, and its connection to a time when dinosaurs walked the earth. Students complete an overnight field trip to an estuary/saltwater marsh and complete research in the tidal wetland. 3 credits.

**MSE 827. Applying Wildlife and Natural Resources to the Classroom.** This course is designed to increase participants' knowledge of the birds and mammals native to Pennsylvania through the study in the classroom and the field of various wildlife habitats associated with Middle Creek Wildlife Management Area and throughout the state of Pennsylvania. A primary goal will be to develop the tools and methods necessary for participants to comfortably present wildlife topics of Pennsylvania to their respective classroom. A key resource for the course will be the expertise of one of the area's wildlife specialists, who will be a co-instructor for the course. All instructional time will occur on site at the Middle Creek Wildlife Management Area. 3 credits.

**MSE 829. Research Methods and Statistics.** Designed to develop the understanding of the methods employed in planning and developing research in science, students will gain experience in generating ideas for research, critically evaluating literature, synthesizing and presenting results of research, and writing in a clear and organized way. Students will explore research-based rationale for reform in science education and address the use of statistics in analyzing science education research as well as local, state, and national assessments. Enduring understandings, content worthy of understanding and the development of essential questions for science courses will be addressed. 3 credits.

**MSE 830.Independent Research in Science Education: Thesis.** A topic relevant to the teaching of science in the classroom will be researched with the approval of the student's advisor. The topic of research should be well documented in professional journals and studies. Graded pass/fail. May be repeated for credit. Prerequisite: MSE 829. 1-3 credits.

**MSE 832.Independent Research in Science Education: Project.** A topic relevant to the teaching of science in the classroom will be researched with the approval of the student's advisor. The topic of research should be well documented in professional journals and studies. Graded pass/fail. May be repeated for credit. 1-3 credits.

**MSE 880.Introduction to STEM Education.** This course serves as a general exploration of the disciplines and approaches to STEM education. Pedagogy, assessment, standards alignment, and trends and issues will be covered in this course. 3 credits.

**MSE 881.STEM Education Systemic Reform.** This is the second course of the three-course STEM concentration. Students will investigate STEM initiatives and programs, including individuals and organizations that have impacted the development of STEM education. The course will also explore funding, budgeting, and grant writing in relation to STEM reform. Prerequisite: MSE 880.3 credits.

**MSE 882.STEM Integrative Curriculum Design.** This is the third course of the three-course STEM concentration. This course will explore integrative curriculum design and assessment. Topics will include state and national standards and analysis of existing STEM curricula and pedagogies. Prerequisite: MSE 880 and MSE 881.3 credits.

**MSE 883. Integrative STEM Education Practicum.** In this course, students will apply and extend integrative STEM knowledge, understanding, and skills acquired through coursework to meaningful field experiences. During the Integrative STEM Education Practicum, students will develop a

digital portfolio of artifacts as evidence in meeting the program competencies and as demonstration of reflective practice. This course may be repeated for credit as topic changes. Co-or prerequisite: MSE 880, 881, or 882.1-3 credits.

**PHT 602. Professional Issues I.** Introduces students to professional practice through professional communication strategies, documentation and billing for a variety of healthcare settings, and teaching and learning concepts for healthcare delivery. 3 credits.

**PHT 604. Professional Issues II.** Introduces the study of professionalism, professional ethics, and practice issues in today's healthcare environment. Students develop an understanding of ethical decision-making through self-discovery and teaching. 4 credits.

**PHT 611. Human Anatomy.** This course is a comprehensive hands-on exploration of the human body, with emphasis on neuromusculoskeletal systems. Structural interrelationships shall be examined as the basis for human movement and as a means to understand abnormalities in structure and function. Directed laboratory experiences are focused on cadaver dissection. Learning is facilitated through textbooks, anatomical models, and audiovisual material. The case examples weaved throughout the course fosters clinical application of knowledge to physical therapy and athletic training practice. Prerequisites: GPA greater than 3.0 0.5 credits. [This course is cross-listed with ATR 611]

**PHT 614. Pathophysiology.** Examines basic human pathology and medical principles, including, but not limited to, inflammation, infection, systemic conditions, diagnostic imaging, genetics, and clinical laboratory tests. 4 credits.

**PHT 616. Biomechanics and Kinesiology.** Examines tissue and joint structure and function, and the mechanical principles involved in human motion. The laboratory portion will introduce students to the basics of postural and gait assessment. Prerequisite: EXSC 311.4 credits. [This course is cross-listed with ATR 616]

**PHT 618. Exercise Science.** Examines skeletal muscle structure and function and cardiovascular, respiratory, and neuromusculoskeletal physiology related to physical activity and exercise in general and special patient/client populations. Current methods of nutritional and physical assessment will be evaluated. 3 credits.

**PHT 620. Motor Control Motor Learning.** This course will focus on the processes that govern human movement acquisition and control across the lifespan and will prepare students to apply principles of motor development, motor control, and motor learning to clinical practice. Emphasis will be placed on developing a working knowledge of the neural, physical, and behavioral aspects of human movement and the process involved in acquiring and refining motor skills across the lifespan. 2 credits.

**PHT 632. Clinical Examination.** An introduction to the tests and measurements used by physical therapists in the clinical and research settings. Laboratory sessions will provide the student with an opportunity to integrate concepts and apply the therapeutic interventions discussed in lecture. 3 credits.

**PHT 634. Cardiovascular-Pulmonary Physical Therapy.** Examines the physical therapy management of individuals with cardiac and respiratory dysfunction. Particular attention is focused on exercise prescription, patient management in various clinical settings, current medical and surgical procedures, and guidelines and education for inpatient and outpatient rehabilitation. 3 credits.

**PHT 635. Physical Therapy in the Inpatient Environment.** This course introduces physical therapy students to the practice of physical therapy in the acute care environments, including hospitals, inpatient rehab centers, and skilled nursing facilities. 2 credits.

**PHT 638. Geriatrics Physical Therapy.** Presents the aging process in relation to pathokinesiology, the immune system, cardiopulmonary system, musculoskeletal system, neuromuscular function, and therapeutic intervention adaptation. 3 credits.

**PHT 661. Integrated Clinical Experience I.** Students will be assigned to a supervising Clinical Instructor (CI) and have the opportunity to participate in foundational patient care activities such as patient interviews and documentation, examination strategies, and interdisciplinary team interactions while demonstrating professional behaviors in a part-time clinical experience. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisite: PHT 511 or 611.1 credit.

**PHT 662. Integrated Clinical Experience II.** Students will be assigned to a supervising Clinical Instructor (CI) and have the opportunity to participate in foundational patient care activities such as patient interviews and documentation, examination strategies, and interdisciplinary team interactions while demonstrating professional behaviors in a part-time clinical experience. Graded pass/fail. Fulfills requirement: Immersive Experience. Prerequisite: Successful completion of first semester PHT professional phase. 1 credit.

**PHT 695. Student Run Free Clinic I.** This is one of a series of courses offered to all physical therapy students in the graduate phase of the program who are interested in participating in the LVC student run free physical therapy clinic for individuals who are underinsured/ uninsured in the community. Students have the opportunity to work with patients throughout the semester, as well as manage all aspects of the clinic. Students will be supervised throughout the experience by licensed physical therapists. Students will be required to undergo HIPPA, OSHA, Standard Precautions, and CPR training and demonstrate competency in all areas prior to working in the clinic. Graded pass/fail. 0 credits.

**PHT 696. Student Run Free Clinic II.** This is one of a series of courses offered to all physical therapy students in the graduate phase of the program who are interested in participating in the LVC student run free physical therapy clinic for individuals who are underinsured/ uninsured in the community. Students have the opportunity to work with patients throughout the semester, as well as manage all aspects of the clinic. Students will be supervised throughout the experience by licensed physical therapists. Students will be required to undergo HIPPA, OSHA, Standard Precautions, and CPR training and demonstrate competency in all areas prior to working in the clinic. Graded pass/fail. 0 credits.

**PHT 716. Health Promotion for Self and Society.** Covers health and health promotion topics across the lifespan. Students will begin to identify community needs that would benefit from a physical therapy program of prevention, health promotion, wellness, and screening services. 3 credits.

**PHT 720. Neuroscience.** Neuroscience examines the anatomy and physiology of the nervous system and changes that occur across the life span, relevant pathophysiology and the functional manifestations of this pathology, and acquisition of basic neurologic examination skills. 4 credits.

**PHT 726. Clinical Interventions I.** First of a two-course sequence designed to instruct students in the use of therapeutic modalities to affect change in human tissues. Laboratory exercises include applying modalities, gait training with various devices, and therapeutic exercise. 4 credits.

**PHT 728. Musculoskeletal I.** First of a two-course sequence providing an in depth study of the evaluation, assessment, and treatment methods used in the management of musculoskeletal pathology and/or injury. This first component of the two-course sequence will emphasize the upper and lower limbs, with an introductory component to the spine. 4 credits. [This course is cross-listed with ATR 628]

**PHT 730. Clinical Interventions II.** A continuation of Clinical Intervention I. This course will examine edema and integumentary concerns, incontinence, and specific exercise techniques. 4 credits.

**PHT 732. Musculoskeletal II.** Second of a two-course sequence providing an in-depth study of the evaluation, assessment, and treatment methods used in the management of musculoskeletal pathology and injury. This course will build upon material studied in PHT 728 and emphasize anatomical, biomechanical, and physiological factors relevant to musculoskeletal dysfunction. 3 credits. [This course is cross-listed with ATR 632]

**PHT 734. Selected P. T. Practice Topics.** This course will cover specialized physical therapy practice areas and advanced evaluative, assessment, and interventional strategies for special populations. 2 credits.

**PHT 736. Neuromuscular Physical Therapy I.** Provides an examination of techniques used in the examination and assessment of persons with nervous system dysfunction. 4 credits.

**PHT 740. Prosthetics.** This course's primary focus is on the physical therapy management of lower extremity amputation with particular attention to assessment and intervention. 1 credit.

**PHT 741. Orthotics.** This course's primary focus is on the physical therapy management of lower extremity orthotics with particular attention to assessment and prescription. 1 credit.

**PHT 742. Pharmacology in Rehabilitation.** Provides a general introduction to pharmacological principles including basic pharmacokinetics and pharmacodynamics. Descriptions of general classes of medications and their impact and utilization in rehabilitation are stressed. 2 credits.

**PHT 751. Foundations of Evidenced Based Critical Inquiry.** Methods of research and scientific discovery are introduced as concepts and with application. The ethical issues of medical research and the role of Institutional Review Boards for the protection of human subjects are emphasized through historical perspectives and current guidelines published by NIH. The scientific peer-review process and components required for publication are reviewed. 3 credits.

**PHT 752. Evidence in Practice.** This is the third course in a four-part course sequence of critical inquiry/evidence-based physical therapy. The extensive use of Comprehensive Appraisals of a Topic is the central theme of this semester. Current published research topics include clinical prediction rules, prognosis, low back dysfunction, shoulder dysfunction and patient satisfaction. Graded pass/fail. 2 credits.

**PHT 762. Clinical Education II.** A seven-week, full-time supervised clinical learning experience to provide students the opportunity to develop clinical competence in the physical therapy management of individuals in an ambulatory or inpatient environment. Graded pass/fail. 3 credits.

**PHT 764. Clinical Education III.** The second, seven-week supervised clinical learning experience where students continue to develop clinical competence in the management of various musculoskeletal, cardiovascular- pulmonary, integumentary, and neuromuscular disorders. Graded pass/fail. 3 credits.

**PHT 795. Student Run Free Clinic III.** This is one of a series of courses offered to all physical therapy students in the graduate phase of the program who are interested in participating in the LVC student run free physical therapy clinic for individuals who are underinsured/ uninsured in the community. Students have the opportunity to work with patients throughout the semester, as well as manage all aspects of the clinic. Students will be supervised throughout the experience by licensed physical therapists. Students will be required to undergo HIPPA, OSHA, Standard Precautions, and CPR training and demonstrate competency in all areas prior to working in the clinic. Graded pass/fail. 0 credits.

**PHT 796. Student Run Free Clinic IV.** This is one of a series of courses offered to all physical therapy students in the graduate phase of the program who are interested in participating in the LVC student run free physical therapy clinic for individuals who are underinsured/ uninsured in the community. Students have the opportunity to work with patients throughout the semester, as well as manage all aspects of the clinic. Students will be supervised throughout the experience by licensed physical therapists. Students will be required to undergo HIPPA, OSHA, Standard Precautions, and CPR training and demonstrate competency in all areas prior to working in the clinic. Graded pass/fail. 0 credits.

**PHT 802. Physical Therapy Administration and Management.** Examines current issues and trends in physical therapy clinical management. 3 credits.

**PHT 830. Neuromuscular PT II.** Examines in detail through a case-based approach specific neurologic conditions, the resulting impairments and functional limitations, and the physical therapy management of persons presenting with these conditions. 4 credits.

**PHT 832. Pediatric Physical Therapy.** Presents an introduction to the physical therapy management of pediatric patients. Topics include normal motor development, and client examination, evaluation, and intervention aimed at improving function and limiting disability. 4 credits.

**PHT 835. Patient Management Seminar.** This course is a collection of seminars focused on specific areas of practice. Students will have the option of selecting from the list of topics. Each seminar /section of the course is to be taken as Pass/Fail. Students must pass both sections of the seminar to pass the course. Graded pass/fail. This course may be repeated for credit as topic changes. 1-2 credits.

**PHT 836. Differential Diagnosis.** Designed to integrate the curricular content to date. In this capstone course, students will demonstrate differential diagnosis as it relates to autonomous practice in realistic clinical situations. 3 credits.

**PHT 840. Clinical Readiness and Review.** The purpose of this course is to ensure student readiness for their final clinical affiliation. The course will include a review of didactic and lab material presented throughout the curriculum, with a focus on integration. A comprehensive practical examination will be the culminating course activity. Graded pass/fail. 1 credit.

**PHT 850. Critical Inquiry Capstone.** This is the capstone course in a four-part course sequence of critical inquiry/evidence-based physical therapy. A formal case study is prepared in two formats for presentation at a professional meeting. The poster format is developed using the

elements of the "Physical Therapist Patient Management Model" as well as a formal case study document detailing the evidence gathered. 2 credits.

**PHT 860.Clinical Education IV.** Final, full-time supervised clinical learning experience spanning sixteen weeks in a multidisciplinary care environment. Students will demonstrate patient management skills for pediatric or adult patients with complex medical diagnoses utilizing an evidence-based approach. Graded pass/fail. 12 credits.

**PHT 861.Clinical Education V.** First of the two final, full-time supervised clinical learning experience spanning eight weeks in a multidisciplinary care environment. Students will demonstrate patient management skills for pediatric or adult patients with complex medical diagnoses utilizing an evidence-based approach. Graded pass/fail. 6 credits.

**PHT 862.Clinical Education VI.** Second of the two final, full-time supervised clinical learning experience spanning eight weeks in a multidisciplinary care environment. Students will demonstrate patient management skills for pediatric or adult patients with complex medical diagnoses utilizing an evidence-based approach. Graded pass/fail. 6 credits.

**PHT 895. Student Run Free Clinic V.** This is one of a series of courses offered to all physical therapy students in the graduate phase of the program who are interested in participating in the LVC student run free physical therapy clinic for individuals who are underinsured/ uninsured in the community. Students have the opportunity to work with patients throughout the semester, as well as manage all aspects of the clinic. Students will be supervised throughout the experience by licensed physical therapists. Students will be required to undergo HIPPA, OSHA, Standard Precautions, and CPR training and demonstrate competency in all areas prior to working in the clinic. Graded pass/fail. 0 credits.

**PSY 601.Professional Standards and Ethics.** This course will review, discuss, and evaluate situational ethics and issues of professionalism in counseling. We will review the ethical codes of several professional organizations, including those of the American Counseling Association (ACA) and American Psychological Association (APA). Students will practice applying government laws and ethical codes to challenges commonly faced in a counseling profession. 3 credits.

**PSY 620.Human Growth and Development.** This course will examine the characteristics of human development across the lifespan with a particular emphasis placed on the biological, psychological, and social factors that impact risk and resiliency following aversive events. Topics will include the major theories of learning and development, cognitive and biological domains of development, and the impacts of addiction, crisis and trauma on individuals from diverse backgrounds. 3 credits.

**PSY 621.Social and Cultural Diversity.** Students will learn about the impacts of individual differences on the counseling relationship. To prepare students to work with diverse populations, this course will explore a variety of topics including race, gender, ethnicity, sexual preference, mental and physical characteristics, education, and socioeconomic status. These characteristics will be considered in the context of delivering ethical and culturally sensitive assessment and counseling services. 3 credits.

**PSY 622.Abnormal Behavior.** This course will provide an overview of typical and atypical development and consider the causes, symptoms, and treatments of common mental disorders. Students will learn to distinguish between normal and abnormal behavior patterns as well as demonstrate knowledge of etiology, symptoms, and therapeutic techniques for psychological disorders. This course will also discuss the role of assessment, intake interviews, and reports to develop treatment plans. 3 credits.

**PSY 701.Orientation to Counseling Processes.** This course provides students with an introduction to the field of counseling. Students will be provided an overview of theories, models, and strategies for practicing within the field. Students will learn and apply the basics of counseling and collaboration to individuals, families, schools, colleges, and community organizations/agencies. Students will learn about the profession, including the history and roles of counselors, organizational structures, ethics, standards, and credentialing. Students will develop skills for basic interviewing, counseling, conceptualizing cases, and developing treatment plans for clients. 3 credits.

**PSY 711.Group Dynamics.** This course provides students with a theoretical and experiential understanding of group development and dynamics. Topics will include theories of group counseling, principles of group dynamics, group member roles and behaviors, leadership styles, types of groups, group formation, and preparation of group leaders. In order to facilitate self-understanding, students will spend 10 hours as members of a group during the course and will reflect upon that experience. Prerequisite: PSY 601 or PSY 701.3 credits.

**PSY 712.Career Counseling & Development.** This course examines the field of career counseling through examination of the theories of career choice and their influence upon entry into the world of work. Topics include career development theories and decision-making models, understanding connections between work and mental well-being in other life roles, career information resources, career planning and career counseling practices. Ethical standards in career counseling, multicultural issues, gender and age bias, and career trends across the lifespan will also be addressed. Prerequisite: PSY 601 or PSY 701.3 credits.

**PSY 720.Helping Relationships and Counseling Theories /Techniques.** This course will examine the following Counseling theories: Psychoanalytic, Adlerian, Existential, Person-Centered, Gestalt, Behavior, Cognitive Behavior, Choice Theory/Reality, Feminist, Postmodern, and Family Systems. Students will learn about the origins, key concepts, historical figures, and techniques that apply to each of these theories. At the end of the course, students will be able to identify their personal theoretical orientation. Prerequisite: PSY 701.3 credits.

**PSY 730.Cognitive Behavior Therapy.** This course explores the theoretical assumptions underlying cognitive-behavioral therapy and its application in treating common psychological disorders. Students will review models and specific cognitive, behavioral, and integrative techniques. Additionally, students will review evidence and efficacy research available for implementation of various cognitive-behavioral psychotherapies for specific disorders. Prerequisite: PSY 601 or PSY 701.3 credits.

**PSY 731.Applied Behavior Analysis.** This course provides an introduction to applied behavior analysis, which uses techniques based on principles of learning to change behavior. Topics will include the description and measurement of behavior, functional assessment and analysis of behavior, and the development, implementation, and evaluation of protocols to alter behavior in educational, clinical, and social settings. The course will review applications of applied behavior analysis across the lifespan and with individuals with disabilities. Prerequisite: PSY 601 or PSY 701.3 credits.

**PSY 732. Addiction Counseling.** This course focuses on identification, assessment, diagnosis, and treatment of addictive behaviors and disorders. Students will be introduced to the prevailing theories around addiction as well as treatment modalities that are most often utilized. The focus will be on learning effective treatment practices and building substance abuse counseling skills. Prerequisite: PSY 601 or PSY 701.3 credits.

**PSY 733. Trauma Counseling.** In this course, students will develop a foundation for assessing and treating post-trauma reactions, including an understanding of the personal and systemic impact of crises, disasters, and other trauma-causing events on individuals, families, and communities. Topics will include mechanisms of PTSD development and maintenance, diagnosis of specific trauma-related conditions, clinical interventions including disaster-related mental health, and self-care strategies to prevent compassion fatigue in counselors. Prerequisites: PSY 601 or PSY 701.3 credits.

**PSY 750. Assessment and Evaluation.** This course provides an understanding of intellectual, personality, academic achievement, and psychopathology tests and other appraisal methods used in the counseling field. Students will develop skills in the selection, administration and interpretation of assessment tools used to evaluate client issues and functioning. Focus will be given to assessment of different dimensions of functioning (behavioral, emotional, cognitive, psychological, and personality) along with ethical and legal issues related to psychological testing. Prerequisite: PSY 601 or PSY 701; and PSY 620, PSY 621 or PSY 622.3 credits.

**PSY 751. Research Methods and Statistics.** This course will develop skills in the design, implementation, and interpretation of psychological research, with particular emphasis on evidence-based counseling practices. Students will review a range of research methodologies (quantitative, qualitative, single-case designs), along with an introduction to the fundamentals of statistics and statistical analyses within the context of developing and evaluating counseling programs and outcomes. Ethical and legal considerations in research and the importance of research within the counseling profession will be addressed. Prerequisites: PSY 601 or 701; and PSY 620, 621 or 622.3 credits.

**PSY 870. Clinical Practicum.** In this course, students complete closely supervised counseling experiences (such as patient observations, shadowing, task assistance, data recording, regulated patient contact, etc.), in mental health care facilities, that total a minimum of 100 clock hours. Practicum students will complete at least 40 clock hours of direct service with actual clients; this includes weekly interactions that average 1 hour per week of individual and/or triadic supervision, and averages 1.5 hours per week of group supervision. Practicum students will meet weekly with supervisors from the counselor education program and a student supervisor and site supervisor from the placement location. Prerequisites: PSY 601, PSY 621, PSY 622, PSY 701 and PSY 711.3 credits.

**PSY 880. Clinical Internship I.** This course provides supervised field work experiences (in the form of highly independent workplace applications of clinical skills including and beyond the more controlled --and previously acquired-- practicum experiences such as patient observations, shadowing, task assistance, data recording, regulated patient contact, etc.), in an approved mental health care clinical setting. Students will complete 300 clock hours of supervised counseling internships in roles and settings with clients relevant to their specialty area. At least 120 of these clock hours must be direct service. Internship hours will include weekly interactions with supervisors that average 1 hour per week of individual and/or triadic supervision, and averages 1.5 hours per week of group supervision. Prerequisites: PSY 620, PSY 621, PSY 711, PSY 730, PSY 750, PSY 751 and PSY 870.3 credits.

**PSY 881. Clinical Internship II.** This course is a continuation of PSY 880, and as such provides supervised field work experiences (in the form of highly independent workplace applications of clinical skills including and beyond the more controlled - and previously - acquired - practicum experiences such as patient observations, shadowing, task assistance, data recording, regulated patient contact, etc.), in an approved mental health care clinical setting. Students will complete 300 clock hours of supervised counseling internships in roles and settings with clients relevant to their specialty area. At least 120 of these clock hours must be direct service. Internship hours will include weekly interactions with supervisors that average 1 hour per week of individual and/or triadic supervision, and averages 1.5 hours per week of group supervision. Prerequisites: PSY 880.3 credits.

**SLP 601. Language Disorders I: Infants, Toddlers, and Preschool.** This course on language disorders focuses the nature, assessment, and treatment of language disorders in infants, toddlers, and preschool children. Students learn language assessment practices and treatment strategies that are developmentally appropriate for young children that concentrate on improving communication between young children and their communication partners. Prerequisite: CSD 320.3 credits.

**SLP 602. Phonological and Speech Sound Disorders.** Students learn about the nature, assessment, and treatment of speech or phonological disorders in children. Students will review normal aspects of articulation and phonological development, learn the causes for speech sound disorders, and discuss articulation or phonological assessment practices and treatment strategies that are development. 3 credits.

**SLP 603. Diagnostic Procedures.** A study of the concepts and processes of the assessment and diagnosis of speech, language, and swallowing disorders. Students will learn psychometric guidelines and interviewing protocols for the disorders commonly evaluated by speech-language pathologists. Students also will discuss ethical considerations of the diagnosis of communicative disorders. Finally, students will learn how to report the results of assessments for different practice settings. Prerequisite: MAS 170.3 credits.

**SLP 604. Communication Issues in Autism Spectrum Disorders.** Students learn about the nature, assessment, and treatment of communication disorders associated with Autism Spectrum Disorders and Pragmatic Language Deficits. Students will learn the impact of Autism Spectrum Disorders across the lifespan, detailing the role of the speech-language pathologist in diagnosis and treatment. 2 credits.

**SLP 605. Clinical I: On-Campus.** This course is the first on-campus supervised clinical experience for students. Students will be supervised by ASHA certified speech-language pathologists and apply theoretical knowledge to clinical practice. Students will develop clinical skills such as self-analysis, decision-making using evidence based practices, progress monitoring, documentation and professional practice. Fulfills requirement: Immersive Experience. 3 credits.

**SLP 606. Clinical Discussion Group.** A study of the concepts and processes for treatments of speech and language disorders. Students will learn specific research based methodology to use with clients during their first clinical experience. Students will also discuss ethical considerations for choices of treatment approaches. 2 credits.

**SLP 607. Hearing Seminar.** Students will receive hands-on opportunities using audiometric testing instruments and exploring audiological intervention methods within the scope of speech-language pathology. 1 credit.

**SLP 620. Augmentative and Alternative Communications.** Students will develop an understanding of information related to concepts, strategies, techniques, and issues that are unique to the field of augmentative and alternative communication. Fourth-year status in the speech pathology program; or by permission of the instructor. 2 credits.

**SLP 621. Language Disorders II: School Age.** This course examines the nature, assessment, and treatment of language disorders in elementary, middle, and high school children. Students learn about definitional and diagnostic issues for the school-aged population and then learn treatment approaches in detail, with special attention to language and literacy interventions aimed at improving phonological processing and oral and written language comprehension and expression. Prerequisite: CSD 320 and SLP 601.3 credits.

**SLP 622. Neurocognitive Disorders.** The student will learn the characteristics, underlying pathology, evaluation, and treatment of communication disorders associated with acquired cognitive impairment including dementia and traumatic brain injury. Restricted to majors in CSD-SLP program. 3 credits.

**SLP 624. Acquired Language Disorders.** Students will learn about the nature, prevention, assessment, and treatment of aphasia. Cognitive and social aspects of acquired language disorders, such as the impact on the family, psychological, neurological, linguistic, and cultural factors of acquired language disorders will be included. Prerequisite: CSD 105, 324. 3 credits.

**SLP 625. Clinical II: On-Campus.** This course is the second on-campus supervised clinical experience for students. Students will be supervised by ASHA certified speech-language pathologists and apply theoretical knowledge to clinical practice. Students will develop clinical skills such as self-analysis, decision making using evidence based practices, progress monitoring, and documentation and professional practice. 3 credits.

**SLP 627. Dysphagia.** Advanced study of the nature, assessment, and treatment of swallowing disorders in adults and children. Topics include the anatomy and physiology of the normal and abnormal swallow, followed by descriptions of specific disorders that may affect each stage of the swallow. Information on normal and abnormal swallows will be integrated to provide the student with the basic entry-level knowledge and skills needed to assess and implement a treatment plan for adult/pediatric patients with dysphagia. Restricted to majors in CSD-SLP program. 3 credits.

**SLP 701. Research Methods in Speech Language Pathology.** This seminar course focuses on a speech-language pathologist's role as a clinical researcher and presents the need for science to inform clinical practice. Students read and critically analyze existing research within speech-language pathology, and review common research designs and data analysis techniques. Students are required to design and complete a collaborative research project. 3 credits.

**SLP 702. Professional Issues/Ethics.** This course examines professional issues and ethical considerations related to speech language pathology. Regulations and requirements for professional practice will be reviewed. 1 credit.

**SLP 705. Clinical III: On-Campus.** This course is the third on-campus experience for students. Students will be supervised by ASHA certified speech-language pathologists and apply theoretical knowledge to clinical practice. Students will develop clinical skills such as self-analysis, decision-making using evidence based practices, progress monitoring, documentation, and professional practice. 3 credits.

**SLP 720. Fluency Disorders.** Advanced study of the etiology, diagnosis, treatment, and prevention of fluency disorders in children and adults. In addition, this course will analyze the impact fluency disorder has on individuals across the lifespan. Prerequisite: CSD 105, 220.2 credits.

**SLP 722. Business Practices in Speech Language Pathology.** This elective course focuses on best business practices for a speech-language pathologist. This course will analyze scope of practice, feasibility studies, billing and coding issues, and creating business plan. 2 credits.

**SLP 723. Voice and Voice Disorders.** A theoretical and applied study of human voice anatomy and physiology and diagnosis and treatment of vocal disorders. This course covers the anatomy and physiology underlying normal voice production, the functional and organic disorders of voice, diagnostic procedures including clinical evaluation and standardized assessments, psychological interviewing principles and counseling of clients with voice disorders and the principles and techniques of voice therapy for children and adults. Prerequisite: CSD 105 and SLP 622.3 credits.

**SLP 725. Clinical IV: Educational Externship.** This course is an external placement in an educational setting. Students will be supervised by ASHA certified speech-language pathologists in an educational setting and apply theoretical knowledge to clinical practice. Students will develop clinical skills such as self-analysis, decision-making using evidence based practices, progress monitoring, documentation and professional practice. 6 credits.

**SLP 726. School Caseload Management.** Students will learn about the expectations of managing a caseload in a school setting, to include scheduling, paperwork, and timelines. Students will also learn about the scope of practice related to the public or private school setting. 1 credit.

**SLP 741. Motor Speech Disorders.** A study of speech disorders resulting from progressive and non-progressive neurological lesions of the central and peripheral nervous systems. Emphasis is placed on etiology and neuropathology of different types of dysarthria, as well as diagnostic and treatment options. Prerequisites: CSD 105, CSD 324; SLP 722.3 credits.

**SLP 744. Advanced Seminar in Communication Sciences and Disorders.** This graduate seminar will provide an extensive overview of the foundations, evaluation, and treatment of all nine ASHS's specialty areas. 1 credit.

**SLP 745. Clinical V: Healthcare Externship.** This course is an external placement in a healthcare setting. Students will be supervised by ASHA certified speech-language pathologists in a medical setting and apply theoretical knowledge to clinical practice. Students will develop clinical skills such as self-analysis, decision-making using evidence based practices, progress monitoring, documentation and professional practice. 6 credits.

**SLP 746. Medical Caseload Management.** This course examines the scope of practice and competencies necessary to work in various medical settings. Students will review coding and demonstrate the use of medical terminology. Students will be able to state ethical challenges faced in medical settings. 1 credit.

**SLP 747. Cleft and Craniofacial Disorders.** Students will learn about the development, characteristics, evaluation, and treatment of children with cleft lip and/or palate as well as other craniofacial syndromes that affect speech, language, hearing, and swallowing. 2 credits.