

Supplemental Course Descriptions for Fall-2018

Updated October 20, 2018

ACCT - Accounting

ACCT 667-11 ADVANCED AUDITING

Studies advanced concepts, theories, and data analytic techniques applied to external integrated audit engagements. Includes case studies and provides an in-depth analysis of current auditing issues.

AFRA - Africana Studies

AFRA 205-11 ART IN THE AGE OF BLACK LIVES MATTER

Explores the place of fine art, film, and popular music within black protest traditions by historicizing #BlackLivesMatter and various artworks it has spurred.

ANFS - Animal & Food Science

ANFS 467-20 PRE-VETERINARY BIOCHEMISTRY

Fundamentals of biochemistry. Includes protein structure and function, enzyme mechanisms and kinetics, carbohydrate and fatty acid metabolism, TCA cycle, electron transport, and biochemical regulatory mechanisms. Prereq: CHEM321/322 or CHEM332.

ANFS 667-19 APPLICATIONS OF GENOME SCIENCE: FROM MICROBES TO MAMMALS

Harness the power of genome science. Gain an understanding of how fundamental principles of genetics and genomics translate into "big data" application platforms ranging from untangling human ancestry to building the future animals and crops for agriculture. Prereq: ANFS/ENWC/PLSC300, or BISC413; STAT200 or MATH201.

ANFS 667-20 PRE-VETERINARY BIOCHEMISTRY

Fundamentals of Biochemistry. Includes protein structure and function, enzyme mechanisms and kinetics, carbohydrate and fatty acid metabolism, TCA cycle, electron transport, and biochemical regulatory mechanisms. Prereq: CHEM321/322 or CHEM332.

ANTH - Anthropology

ANTH 267-70 PREHISTORIC ARCHAEOLOGY AND JAPANESE ETHNICITY

Archaeological and anthropological perspectives on Japanese ethnicity through early writings in Meiji and Taisho periods, prehistoric archaeology; current developments of genetic studies in Japanese archipelago and AsiaPacific basins; history in immigration, religion, society, environment, and food.

ANTH 367-70 PERSONHOOD AND THE SELF: ANTHROPOLOGICAL PERSPECTIVES

In the age of globalization, considers different countries which are geographically and culturally apart. Studies how a proper way of being a person may differ from one social group to another.

ARSC – Arts & Sciences

ARSC 167-10 ASSOCIATE IN ARTS PROGRAM TRANSITION SEMINAR

Designed to support a successful transition of AAP students to the main campus. Includes on-campus resources, connecting with fellow AAP students, and setting goals for junior and senior years.

ART - Art and Design

ART 267-70 SEMINAR: SPANISH CONTEMPORARY ART

Provides an intro to Spanish contemporary art. Examines the concepts behind the work and the evolution of Spanish art in relation to similar movements in Europe and United States. Includes visits to relevant exhibitions in Barcelona, and talks by professional artists.

ART 267-71 SEMINAR: SPANISH CONTEMPORARY ART: 1970-1990

Introduction to contemporary Spanish art between the years 1970 and 1990. Taught in Spanish. Prereq: 300 level SPAN course.

ART 367-70 SEMINAR: NEW TENDENCIES IN SPANISH CONTEMPORARY ART

Spanish contemporary artists explore how frontiers between classic disciplines are dissolving, and how contemporary art is becoming ever more interdisciplinary, confusing and unclassifiable.

ART 467-11 BRIDGING ART & SCIENCE: ENVIRONMENTAL COMMUNICATION

Discovery and exploration of current issues in Insect and Wildlife Ecology through photography and video. Engages in multidisciplinary problem based photographic approaches to communicating a variety of environmental topics discussed by guest lecturers, and covered during field trips.

ART 467-70 SEMINAR: URBAN INVENTIONS AND ART AS LANGUAGE

Focuses on the idea that art and urban interventions can be understood as a language. In order to maintain the course as close to real artistic practice, there will be scheduled visits to various museums and public spaces.

ARTH - Art History

ARTH 167-70 HISTORY OF ART: PREHISTORIC TO MIDDLE AGES

Survey of art and architecture in the Western tradition from prehistoric times until the end of the Middle Ages. Familiarizes students with main developments in visual culture during the chosen period. Introduces basic methodology of art-historical studies.

ARTH 311-10 WOMEN IN ANTIQUITY

Explores the lives of women in the ancient Greece & Rome through an investigation of visual & textual sources. Topics include ancient domestic life, sexuality, medicine, & religion among powerful women, wives, working women, & slaves.

ARTH 402-10 ARTS OF CRIME & PUNISHMENT IN THE UNITED STATES

Considers how painters, photographers, sculptors, cartoonists, designers, architects, filmmakers, and other artists have represented, shaped, negotiated, and challenged the social norms and institutional practices of crime and punishment in the United States since c. 1831.

ARTH 406-80 NARRATIVE IN THE AGE OF GIOTTO

Examines the function and purpose of pictorial narrative in the West from the eleventh century to Giotto's emergence in the fourteenth. Considers medieval and early Renaissance art from all of western Europe. Special attention given to southern Europe, specifically Italy.

ARTH 467-11 DIPLOMATIC THINGS: ART & ARCHITECTURE IN GLOBAL CONTEXTS

Explores how art and architecture have been deployed by the modern state in pursuing diplomatic agendas. Cultivates critical understandings of how subversion is materialized in international relations, plotting American and African engagements with one another and in European and Asian arenas.

ARTH 601-10 METHODS & HISTORIOGRAPHY

The development of art history from Vasari through Winckelmann to the present. Research methods and tools; interpretation and theory including connoisseurship, iconography, semiotics, social art history, psychoanalysis, post-structuralism, globalism, thing theory, technical art history, visual studies.

ARTH 602-10 AUTHORSHIP & ATTRIBUTION

Explores how, why, and to what ends the search for attribution is practiced today, in museums and beyond. Studies these issues through first-hand investigations of specific European paintings.

ARTH 606-10 NARRATIVE IN THE AGE OF GIOTTO

Examines the function and purpose of pictorial narrative in the West from the eleventh century to Giotto's emergence in the fourteenth. Considers medieval and early Renaissance art from all of western Europe. Special attention to southern Europe, specifically Italy.

ARTH 616-10 ORIGINALITY, CREATIVITY, VIRTUOSITY IN RENAISSANCE & BAROQUE ART & THEORY

Theories of originality and the creative process. Topics include: artistic rivalries; plagiarism; nonfinito; paragone; difficulta; the "divine" artist; concepts of novelty; allegories of genius. Focus on Leonardo, Michelangelo, Cellini, Caravaggio, Carracci, Reni, Rosa, Bernini, Velazquez, Giordano.

ARTH 667-10 THE GLOBE, ASIA, AESTHETICS

Part of the Terra Foundation-funded Project on Impact of Asian Aesthetics on North America. Studies the emergence and translation of aesthetics through flow of ideas, visual memory, cultural industry, and human movement.

ARTH 667-11 DIPLOMATIC THINGS: ART & ARCHITECTURE IN GLOBAL CONTEXTS

Explores how art and architecture have been deployed by the modern state in pursuing diplomatic agendas. Cultivates critical understandings of how subversion is materialized in international relations, plotting American and African engagements with one another and in European and Asian arenas.

ARTH 667-12 THE BLACK ATLANTIC & THE ARCHIVE

Explores Black cultural and intellectual productions through transatlantic circuits of exchange. Engages conceptualizations of the Black Atlantic that emerge and diverge from theorist Paul Gilroy. Examines the archives that inform this body of scholarship.

BHAN - Behavioral Health & Nutrition

BHAN 267-10 INDIVIDUAL HEALTH ASSESSMENT

Theoretical background related to specific health risk appraisal tools, the meaning of the results and an opportunity to develop skills necessary to conduct non-invasive health appraisals, including heart rate, blood pressure, body composition, cardiovascular, musculoskeletal fitness.

BHAN 367-10 HEALTH COMMUNICATION CAMPAIGNS

Examines health communication campaigns that promote behavior change at the individual, interpersonal, organizational, and community levels. Exploration of the current media environment and how campaigns use channels including apps, social networks, and television.

BHAN 467-10 HEALTH BEHAVIOR SCIENCE PEER MENTORING

Opportunity to develop and apply skills as Peer Mentors for students enrolled in BHAN160 Health Behavior Science Seminar. Peer Mentoring experiences will be learned and applied under BHAN Professional Academic Advisor supervision.

BMSC – BioMECHANICS & Movement Science

BMSC 867-11 MUSCULOSKELETAL ULTRASOUND IMAGING IN CLINICAL PRACTICE & RESEARCH

Covers fundamentals of musculoskeletal ultrasound imaging of the trunk and major peripheral joints through lectures, live demonstrations, and hands-on practice, with instructor feedback. Discusses and demonstrates applications of ultrasound imaging in healthcare practice and research.

BISC – Biological Sciences

BISC 367-10 INTRODUCTION TO IMMUNOLOGY

Covers the central concepts of immunology. Understands how the body distinguishes between self and pathogen, and how the body mounts resistance to infectious disease. Discusses the cells, tissues and molecules, etc. Prereq: BISC207.

CIEG - Civil & Environmental Engineer**CIEG 267-10 CEM SEMINAR**

Explore current developments in advancing the construction industry and profession. Interact with industry professionals, visit construction sites, learn and become certified in Procore. Explore and discuss professional societies and licensing, and work on career development activities.

CIEG 467-11 ENVIRONMENTAL ENGINEERING COMMUNICATION

Covers key concepts for effective communication in environmental engineering, including stakeholder identification and methods of communication. Uses specific projects (site remediation, permit issuance, stormwater management, etc.) as a basis for in-class activities.

CIEG 467-12 CONCRETE MATERIALS

Covers fundamentals of cement and concrete, its constituents and sustainability aspect; relates processing with chemistry, microstructure and performance like strength and durability.

CIEG 467-14 MICROBIOLOGY LAB

Basic microbiology laboratory techniques, and biological analyses important to environmental engineering and water quality. Isolate and identify microbes with activities potentially useful in water treatment technologies.

CIEG 467-15 CONSTRUCTION MEANS & METHODS

Introduces basic and advanced construction equipment and methods used in commercial and heavy construction. Topics include equipment spreads for site-preparation and earthwork; engineering economics for equipment decision making, and sustainable methods for construction operations.

CIEG 667-10 CONVEX OPTIMIZATION

Optimization principles and techniques including linear/non-linear programming, network flow, multiobjective decision making, decision analysis, queueing, game theory. Modeling/solving real-world problems using commonly available software tools Excel Solver and IBM ILOG CPLEX Optimization Studio.

CIEG 667-11 ADVANCED STRUCTURAL ANALYSIS

Intro to various methods of analysis of statically indeterminate structures. Discusses force methods and displacement methods; method of consistent distortions, equation of three moments, slope deflection, moment distribution. Considers approximate methods of analysis; portal and cantilever.

CIEG 667-12 CONCRETE MATERIALS

Covers fundamentals of cement and concrete, its constituents and sustainability aspect; relates processing with chemistry, microstructure and performance like strength and durability.

CIEG 667-13 PROJECT ENGINEERING FOR RAIL/TRANSIT

Provides an overview of project management and construction engineering skills required for rail and transit operations. Includes effective management strategies, cost estimation and cost control, planning and scheduling, value engineering, condition assessment and infrastructure asset management.

CIEG 667-14 MICROBIOLOGY LAB

Basic microbiology laboratory techniques, and biological analyses important to environmental engineering and water quality. Isolate and identify microbes with activities potentially useful in water treatment technologies.

CIEG 667-16 TRANSPORTATION SUSTAINABILITY

Emphasizes real-world analysis methods to examine sustainability from practitioner's point of view. Presents and discusses aspects of sustainability. Prior knowledge or expertise in the techniques is not needed. Teaches GIS and other computer-based methods.

CISC - Computer & Info Sciences

CISC 367-10 INTRODUCTION TO COMPUTER SCIENCE RESEARCH

Prepares students to conduct computer science research. Topics: research methodology: literature reviews; identifying important research problems; problem solving/progress tracking; designing/conducting evaluation studies; oral/written communications of research; and research ethics.

CISC 459-10 THE POWER OF NETWORKS

Introduces six fundamental principles of networking that connect our lives. Considers examples such as how Google orders search results; why Amazon, Netflix and YouTube use different rating and recommendation methods; why WiFi is faster at home than at Starbucks. And more!

CISC 467-10 MALWARE ANALYSIS

Provides practical approaches to the understanding of malicious software. Learn the fundamentals of and associated tools for malware analyses. Covers behavioral and code analysis phases. Content does not preclude students having limited exposure to programming concepts from enrolling.

CISC 467-11 INTRODUCTION TO HUMAN-COMPUTER INTERACTION

Studies research and theoretical methods for the study, design, implementation and evaluation of effective user interactive systems, including requirements for gathering, survey design, and rapid prototyping. Hands-on group projects supplement theoretical knowledge.

CISC 467-12 VIP: CLOUD CRYPTO

ATM security using biometrics, Blockchain voting systems, Penetration Testing, Secure Software Design, and Fully Homomorphic Encryption.

CISC 467-13 VIP: HIGH-PERFORM COMPUTING

Learning and using directives for parallel platforms; Migrating legacy code to GPUs and co-processors using high-level parallel programming models; Parallelizing irregular algorithms on massively parallel processors; Exploring Repeatability and Reproducibility issues.

CISC 489-10 AI IN GAMES

Artificial Intelligence is becoming an increasingly important part of computer and video games. The techniques that are often used in games for movement; path finding; decision making; tactics and strategy; and learning will be examined and implemented in several turn-based and real-time games.

CISC 659-10 THE POWER OF NETWORKS

Introduces six fundamental principles of networking that connect our lives. Considers examples such as how Google orders search results; why Amazon, Netflix and YouTube use different rating and recommendation methods; why WiFi is faster at home than at Starbucks. And more!

CISC 667-11 INTRODUCTION TO HUMAN-COMPUTER INTERACTION

Studies research and theoretical methods for the study, design, implementation and evaluation of effective user interactive systems, including requirements for gathering, survey design, and rapid prototyping. Hands-on group projects supplement theoretical knowledge.

CISC 849-10 APPLIED GAME THEORY

Explore game theory; survey recent research; and identify research challenges and directions.

CISC 849-11 ETHICAL ISSUES IN ROBOTICS & AI

Covers the history of robotics and artificial intelligence; reviews philosophical foundations and professional guidelines for engineers; and examines topics such as robots as caregivers/companions, surveillance and data mining, driver-less cars, military drones, and superhuman game-players.

CISC 859-10 NETWORK & DISTRIBUTED SYSTEMS SECURITY

Selected topics in network and distributed system security. Involves reading, presenting, and discussing research papers and a term project. Topics include Internet security, wireless and mobile network security, Internet of Things security, cloud computing security, and social network security.

CISC 889-10 MULTI-AGENT LEARNING

Seminar-format exploration of cooperative and competitive learning (or adaptation) in a multi-agent context. Primary focus is on multi-agent reinforcement learning (learning in stochastic games). Discusses both traditional AI and game-theoretic approaches in the recent literature will be discussed.

COMM - Communication

COMM 267-70 LANGUAGE AND POWER

Comprehend the basic tenets connecting language to power. Gain resources to argue the pivotal questions and investigate the problematic issues.

COMM 267-71 VISUAL CULTURE

Introduces students to visual culture. Focuses on photography, film and multimedia. Familiarizes students with international photography, both historical and contemporary and how imagery is used to communicate with an audience.

COMM 318-70 ETHICS IN THE MEDIA

Focuses on introductory areas of study in media communication.

COMM 337-50 MID-TERM MATTERS

Seminar offered in conjunction with speaker series focused on current policy and political problems facing the United States. Guest lecturers, officeholders and candidates, political and media practitioners explore the problems and their implications for the nation, and for campaigns and decision making.

COMM 418-10 PROGRAMMING

Principles and strategies of programming for broadcasting and cable. Topic areas include audience feedback, network & local programming, syndication, and specialized programming, followed by an analysis of TV ratings. Review of financial aspects of buying syndicated packages.

COMM 418-12 MAKING SCIENCE MAKE SENSE

Examines how science issues are explained in popular media. Learn how to critically view media to discover how science is used and misused, and how to better understand science issues.

COMM 440-10 COMMUNICATION FOR EFFECTIVE LEADERSHIP

Focuses on theories of leadership, as well as the emotional, behavioral, and communicative tools that allow individuals in leadership positions to better engage team members, defuse confrontations, and motivate others toward their best efforts.

COMM 618-12 MAKING SCIENCE MAKE SENSE

Examines how science issues are explained in popular media. Learn how to critically view media to discover how science is used and misused, and how to better understand science issues.

DISA - Disaster Science & Management

DISA 467-11 ISSUES IN DISASTER RECOVERY

Involves the theory and practice of Disaster Recovery.

DISA 667-11 ISSUES IN DISASTER RECOVERY

Involves the theory and practice of Disaster Recovery.

EDUC - Education**EDUC 267-70 EDUCATION SYSTEMS**

A wide-ranging introduction to education systems, with special reference to education in Japan. Examining both a broad range of key areas and participants' own assumptions. Comparative approach will be used to engage with emerging educational issues as well as existing programs in Japanese education.

EDUC 667-10 INTRODUCTION TO ASSISTIVE TECHNOLOGY

Provides an overview of assistive technologies that can be used to support academic, communication, and social development. For students enrolled in the Online M.Ed. in Exceptional Children and Youth or Course of Study.

EDUC 867-10 BAYESIAN ANALYSIS

Prepares students to be an independent thinker of statistics, to develop the ability to question, and to pursue statistical solutions via simulation models using R. Introduces Bayesian methodology for data analysis.

EGGG - Engineering**EGGG 467-10 DATA SCIENCE II**

Examines how one can employ tools/techniques of data science. Covers topics needed to solve problems, including data preparation (collection & integration), data characterization & presentation, data analysis (experimentation & observational studies), and data products. Continues Data Science I.

ELEG - Electrical Engineering**ELEG 467-10 VIP: GRID INTEGRATED VEHICLES**

Identifies electric vehicles based on their unique charging characteristics; develops open source software that can be deployed by all electric vehicle chargers; collects data and validates results using our university fleet of electric vehicles and charging stations.

ELEG 467-11 VIP: E-TEXTILES

Course involves electronic material design such as functional inks for realizing conductive, resistive and capacitive elements using additive manufacturing; Electronic design of integrated textile based biosensors; Seamless integration of electronic components. <http://vip.udel.edu/e-textiles>

ELEG 467-12 VIP: CLOUD CRYPTO

ATM security using biometrics, Blockchain voting systems, Penetration Testing, Secure Software Design, and Fully Homomorphic Encryption.

ELEG 467-13 VIP: HIGH-PERFORM COMPUTING

Learning and using directives for parallel platforms; Migrating legacy code to GPUs and co-processors using high-level parallel programming models; Parallelizing irregular algorithms on massively parallel processors; Exploring Repeatability and Reproducibility issues.

ELEG 467-16 VIP: DRONES

Key Elements include Image Processing, Sensor Fusion, Control Systems, Volume Reconstruction, Object Detection In Images, Adaptive Systems And Machine Learning. To learn more, go to <http://vip.udel.edu/drone>

ELEG 467-17 VIP: SCOOTERSV2.0

Goals: A self-driving mobility scooter for the elderly and the infirm. Key elements are Electronic sensors, computer vision, and machine learning. To learn more, go to <http://vip.udel.edu/scooterv2>

ELEG 467-18 CYBERSECURITY SCHOLARS

Cybersecurity scholars intends to train thought leaders in cybersecurity as part of a four-year program. Students explore real-world issues in cybersecurity while working with clients and experts.

ELEG 467-20 CHARACTERIZATION OF ELECTRONIC MATERIALS AND DEVICES

Focuses on the fundamentals and practical considerations of the myriad techniques that are used to characterize electronic materials. Includes the theoretical underpinnings of the techniques and discuss applicability and limitations.

ELEG 667-20 CHARACTERIZATION OF ELECTRONIC MATERIALS AND DEVICES

Focuses on the fundamentals and practical considerations of the myriad techniques that are used to characterize electronic materials. Includes the theoretical underpinnings of the techniques and discuss applicability and limitations.

ENWC - Entomology & Wildlife Ecology**ENWC 267-10L MED/VET/FORENSIC ENTOMOLOGY**

Explores the animal and human diseases vectored by insects and other arthropods, and the role insects play in decomposition and criminal investigations, with focus on morphology, behavior, and life cycles of medically and forensically important arthropods.

ENWC467-11 BRIDGING ART & SCIENCE: ENVIRONMENTAL COMMUNICATON

Discovery and exploration of current issues in Insect and Wildlife Ecology through photography and video. Engages in multidisciplinary problem based photographic approaches to communicating a variety of environmental topics discussed by guest lecturers, and covered during field trips.

ENWC 667-10 CHEMICAL ECOLOGY

Discover that plants talk to each other, insects and birds use odors to locate preys, fish not only stink but also smell their environment, and that babies recognize the smell of their mom. Welcome to an unexpected world of fragrances.

ENWC667-11 BRIDGING ART & SCIENCE: ENVIRONMENTAL COMMUNICATON

Discovery and exploration of current issues in Insect and Wildlife Ecology through photography and video. Engages in multidisciplinary problem based photographic approaches to communicating a variety of environmental topics discussed by guest lecturers, and covered during field trips.

GEOL - Geological Sciences**GEOL 667-13 ADVANCED TOPICS IN HYDROLOGY**

Explores topics in Hydrological Sciences at an advanced level. Examines three areas of active research. Taught in modular format to give students flexibility to select three topics most relevant to them from a list of Specialized Hydrology Courses (SOHCs).

HDFS - Human Development & Family Sciences**HDFS 267-10 DIVERSITY SELF-AWARENESS**

Designed to provide students with an understanding and awareness of systemic inequality and its individual effects. Students complete racial literacy and cultural competence training. Includes six hours of field experience. A background check is required.

HDFS 367-10 INTRODUCTION TO SOCIAL WORK PRACTICE

Provides an overview of Social Work as a profession and practice. Discusses the historical development of social work, theoretical perspectives, multi-cultural issues, National Association of Social Workers (NASW) code of ethics, social problems and careers.

HDFS 467-12 ADVANCED RESEARCH IN SUBSTANCE USE DISORDERS

Participation in a faculty member's applied research program on issues related to substance use disorders. Covers overview of substance use, along with research study design and implementation; data collection, management, and analysis; and dissemination of findings.

HDFS 667-10 SUBSTANCE ABUSE AND THE FAMILY

Provide an overview of substance abuse, with an emphasis on how it affects the family. Topics include definitions and trends, the physiological effects of substances, the psychological effects of substances, children of substance abusing parents, prevention, and intervention.

HDFS 667-12 ADVANCED RESEARCH IN SUBSTANCE USE DISORDERS

Participation in a faculty member's applied research program on issues related to substance use disorders. Covers overview of substance use, along with research study design and implementation; data collection, management, and analysis; and dissemination of findings.

HDFS 867-10 GRANT WRITING SEMINAR

Introduction to funding agencies and opportunities, components of successful grant applications, and the grant review process. Prepare a grant application, and review/provide feedback on the work of peers. Focuses is on funding from NIH, NSF, IES and Spencer Foundation.

HLPR - Health Promotion

HLPR 467-11 PUBLIC HEALTH IN PRACTICE

Examines factors that lead to health inequities i.e.; educational and economic disadvantage, food insecurity, trauma, and isolation. Explores the dilemma confronting policymakers, providers, and community members, through cases and presentations. Exposure to community engagement.

HLPR - Health Promotion

HLTH 367-10 CAREER EXPLORATION IN DISABILITY SERVICES

Explores opportunities and prepares students for an array of different careers and graduate study in the disabilities services field. Assists students with identifying interest areas and job possibilities in various settings and with different populations.

KINESIOLOGY & APPLIED PHYSIOLOGY

KAAP 440-10 NEUROSCIENCE OF MOVEMENT DISORDERS

Overview of the etiology and pathophysiology of the sensory and motor systems in movement disorders such as Parkinson's disease, Huntington's disease, dystonia, tremor, cerebellar disorders, and spinal cord injury. Includes discussion of scientific approaches for treatment.

MALS - Master of Arts in Liberal Studies

MALS 667-10 HOW TO READ AN ELECTION.

Uses psychology, literature and film for insights into how people really make decisions; why even transparent lies are so often effective; and how people can draw opposite conclusions from the same evidence; relevant to questions that inevitably arise during an election season.

MAST - Marine Science & Policy

MAST 467-17 MARINE ORGANIC GEOCHEMISTRY

Considers all aspects of organic matter in the marine environment including its quantities, allochthonous and autochthonous sources and sinks, molecular composition, reactivity, and measurement. Prereq: CHEM213/215 or CHEM331/322 and associated labs.

MAST 667-17 MARINE ORGANIC GEOCHEMISTRY

Considers all aspects of organic matter in the marine environment including its quantities, allochthonous and autochthonous sources and sinks, molecular composition, reactivity, and measurement. Prereq: CHEM213/215 or CHEM331/322 and associated labs.

MAST 667-18 METHODS IN FISH ECOLOGY

Laboratory & field based course teaching students a variety of approaches and techniques used to study the biology and ecology of estuarine and marine fishes. Introduces traditional fish ecology methods, in addition to newer techniques and approaches.

MATH - Mathematical Sciences

MATH 267-10, 11 INTEGRATED APPROACH TO CALCULUS IA

Course integrates Calculus and PreCalculus.

MATH 267-13 INTEGRATED CALCULUS IB

Continuation of MATH267 INTEGRATED Calculus sequence. Prereq: successful completion of Integrated Calculus 1A.

MATH 467-11 UNDERGRADUATE MATHEMATICS TEACHING: RESEARCH & PRACTICE

First of a two-course sequence designed for undergraduate and graduate students in Mathematics, interested in learning about research in undergraduate Mathematics teaching and learning, and honing their own abilities to teach and/or to tutor Mathematics.

MATH 567-11 STOCHASTIC CALCULUS WITH APPLICATIONS IN FINANCE

Covers the essentials of stochastic calculus with a view towards applications to finance, primarily stochastic portfolio theory. Prereq: MATH 221 or MATH241; MATH210 or MATH230. MATH 350 recommended.

MATH 667-11 UNDERGRADUATE MATHEMATICS TEACHING: RESEARCH & PRACTICE

First of a two-course sequence designed for undergraduate and graduate students in Mathematics, interested in learning about research in undergraduate Mathematics teaching and learning, and honing their own abilities to teach and/or to tutor Mathematics.

MISY - Management Information Systems

MISY 467-10 DATA & ANALYTICS

Builds knowledge of relational databases and also explores non-relational (noSQL) databases. Applies these structures to machine learning and artificial intelligence using Python. Prereq: MISY330 and MISY225.

MSEG - Materials Science & Engineering

MSEG 467-20 CHARACTERIZATION OF ELECTRONIC MATERIALS AND DEVICES

Focuses on the fundamentals and practical considerations of the myriad techniques that are used to characterize electronic materials. Includes the theoretical underpinnings of the techniques and discuss applicability and limitations.

MSEG 667-13 ELECTRONIC STRUCTURE OF MOLECULES & SOLIDS

Covers molecular orbital theory, linear combinations of atomic orbitals for simple molecules and polymers, tight binding and k.p. descriptions of semiconductors. Includes elements of group theory, spin-orbit coupling, effects of strain on band structures, and band alignments at interfaces.

MSEG 667-20 CHARACTERIZATION OF ELECTRONIC MATERIALS AND DEVICES

Focuses on the fundamentals and practical considerations of the myriad techniques that are used to characterize electronic materials. Includes the theoretical underpinnings of the techniques and discuss applicability and limitations.

MSEG 667-21 BIO-INSPIRED MATERIALS: FROM SYNTHESIS TO MANUFACTURING

Focuses on the design of macromolecular materials utilizing inspiration from natural systems, such as wood, nacre, silk, and pine cones. Discusses key synthetic strategies, hybrid approaches, architectural schemes, manufacturing innovations, and potential applications.

MUSC - Music

MUSC 167-10 HISTORY OF FILM MUSIC

Examine a history of music in cinema from silent movies to present day with an emphasis on key periods and the works of seminal composers and filmmakers. Knowledge of music is not required, but helpful.

NTDT - Nutrition & Dietetics

NTDT 367-10 APPLICATION IN CLINICAL PRACTICE

Didactic, experimental learning opportunities in clinical nutrition (hospital setting), including application of nutrition care process, model in simple/complex medical conditions. Students complete comprehensive case study on patient with a chosen medical condition. Prereq: NTDT250 Coreq: NTDT450 Recommend

NTDT 367-11 CULINARY MEDICINE

Blended course of online learning, experiential laboratory experience, problem-based case studies in practical applications, translation of nutrition recommendations into food prep. Topics include basic prep principles and recipe modifications for nutrition-related medical conditions and concerns.

NTDT 467-10 PEDIATRIC OVERWEIGHT OBESITY

Examine the social determinant, behavioral factors that play a role in pediatric overweight/obesity from early childhood to adolescence. Includes physical/psychological consequences of overweight/obesity in the pediatric population. Emphasis on implementation of evidence-based interventions/programs.

NTDT 467-12 NUTRITION PEER MENTORING

Focus on developing skills in academic advising/mentoring for peers. Experiences under supervision of nutritional faculty member.

PHIL – Philosophy

PHIL 367-10 LOCIG FOR THE LAW

Focuses on the formal logic that underlies the law. Prepares students for the logical structure of the problems on the Law School Admissions Test.

PHIL 465-10,80 CAUSATION

Writing intensive seminar focusing on the metaphysics of causation and causal explanation in the philosophy of science, mind and action.

PHYS - Physics

PHYS 467-10 100 EARTHS: DISCOVERING TERRESTRIAL PLANETS

Uses archival data from the long-running HARPS planet search, to learn how to discover planets. Progresses to brand new data from EXPRES, performing basic validation and searching for star wobbles caused by planets. Looks for signs of starspots.

PLSC - Plant & Soil Science**PLSC 467-13 PLANT-CONTAMINANT INTERACTIONS**

Explores how organic and inorganic contaminants interact with plant rhizospheres and roots and consequently follow pathways ranging from contaminant degradation to plant toxicity. Discusses applications to food safety, pesticide development, and phytoremediation.

PLSC 467-19 APPLICATIONS OF GENOME SCIENCE: FROM MICROBES TO MAMMALS

Harness the power of genome science. Gain an understanding of how fundamental principles of genetics and genomics translate into "big data" application platforms ranging from untangling human ancestry to building the future animals and crops for agriculture. Prereq: ANFS/ENWC/PLSC300, or BISC413; STAT200 or MATH201.

PLSC 667-13 PLANT-CONTAMINANT INTERACTIONS

Explores how organic and inorganic contaminants interact with plant rhizospheres and roots and consequently follow pathways ranging from contaminant degradation to plant toxicity. Discusses applications to food safety, pesticide development, and phytoremediation.

PLSC 667-19 APPLICATIONS OF GENOME SCIENCE: FROM MICROBES TO MAMMALS

Harness the power of genome science. Gain an understanding of how fundamental principles of genetics and genomics translate into "big data" application platforms ranging from untangling human ancestry to building the future animals and crops for agriculture. Prereq: ANFS/ENWC/PLSC300, or BISC413; STAT200 or MATH201.

POSC - Political Science**POSC 447-10 NATIONAL AGENDA**

Seminar offered in conjunction with speaker series focused on current policy and political problems facing the United States. Guest lecturers, officeholders and candidates, political and media practitioners explore the problems and their implications for the nation, and for campaigns and decision making.

PSYC- Psychology**PSYC 467-12 ADVANCED SOCIAL PSYCHOLOGY**

Provides an advanced level introduction to the field of social psychology. Focuses less on breadth, and more on a deeper consideration of core themes.

SOCI – Sociology**SOCI 467-11 ISSUES IN DISASTER RECOVERY**

Involves the theory and practice of Disaster Recovery.

UAPP – Urban Affairs & Public Policy**UAPP 467-17 U.S. FEDERAL POLICYMAKING TOOLKIT**

Experts affiliated with the Biden Institute discuss current topics in Federal Policymaking. Considers the Congress reconciliation process; OMB, OIRA, and the CBO; the difference between and executive order and an executive action. Includes how to write a policy memo. Designed to prepare students for their first job or internship in Washington.

UAPP 467-18 SEMINAR ON NON-PROFIT MANAGEMENT

Experts affiliated with the Biden Institute discuss current topics in Non-Profit Management. Examines and discusses the essential tools necessary to run a non-profit organization.

UAPP 467-19 SEMINAR ON US. IMMIGRATION POLICY

Examines and explains both the politics and the cultural issues that have influenced federal immigration policy, including the travel ban, rescinding DACA, separating children from their parents, the history of immigration laws, the issue of the undocumented, legal immigration and a “merit-based” system, humanitarian visas, and border and enforcement policies. Considers how immigration is used as an election issue.

UAPP 667-19 SEMINAR ON US. IMMIGRATION POLICY

Examines and explains both the politics and the cultural issues that have influenced federal immigration policy, including the travel ban, rescinding DACA, separating children from their parents, the history of immigration laws, the issue of the undocumented, legal immigration and a “merit-based” system, humanitarian visas, and border and enforcement policies. Considers how immigration is used as an election issue.

WOMS - Women's Studies

WOMS 311-10 WOMEN IN ANTIQUITY

Explores the lives of women in the ancient Greece & Rome through an investigation of visual & textual sources. Topics include ancient domestic life, sexuality, medicine, & religion among powerful women, wives, working women, & slaves.