

# Supplemental Course Descriptions for Spring-2017

Updated December 14, 2016

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## ACCT - Accounting

### **ACCT 467-11 INTERNAL AUDITING**

Covers internal audit from a broad perspective, and the important role in today's companies. Includes Governance, Ethics, Business Processes, Risk Assessments, Controls, and Information Technology.

### **ACCT 667-11 INTERNAL AUDITING**

Covers internal audit from a broad perspective, and the important role in today's companies. Includes Governance, Ethics, Business Processes, Risk Assessments, Controls, and Information Technology.

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## ART - Art and Design

### **ART 267-70 SPANISH CONTEMPORARY ART**

Introduction to the concepts behind the work, and the evolution of Spanish contemporary art Complimented by visits to relevant exhibitions in Barcelona and talks by professional artists.

### **ART 367-10 SEM: SCIENCE THROUGH STORYBOOKS**

Marine Science, Art and Design, and Psychology students work together in an interdisciplinary course format, to create and evaluate the effectiveness of visual storybooks, to communicate scientific methods and principles about the ocean and aquatic life to children.

### **ART 367-70 NEW TENDENCIES IN SPANISH CONTEMPORARY ART**

Introduction to new territories and how they are being explored by Spanish contemporary artists. Includes contemporary art as interdisciplinary; new points of interaction; and new crossings of information and action.

### **ART 467-70 URBAN INVENTIONS & ART AS LANGUAGE**

Understand Art and urban interventions as a language. Develop and understanding the fundamental elements which help us to look at, and to observe painting and sculpture. Includes visits to various museums and public spaces.

### **ART 667-10 MFA TEACHING PRACTICUM**

Provides hands-on experience and instruction in teaching undergraduate studio art courses, as well as readings and discussions about artist-led pedagogy.

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## ARTH - Art History

### **ARTH 367-10 ART AND ENVIRONMENTALISM**

Addresses how artists have responded to changing environmental conditions and ideas about nature, from the creation of national parks in the 19th century to climate change in the present.

### **ARTH 367-12 MUSEUM EXHIBITIONS AND COLLECTIONS**

Involves object research; label & text writing; proper care, handling, preparation of objects for exhibition; installation & de-installation of exhibitions; evaluations & critiquing techniques; and writing exhibition prospectuses & proposals. Students work individually and in teams.

### **ARTH 415-10, 80 SEM: ROME IN THE AGE OF BERNINI**

Bernini's sculpture and architecture in the context of papal patronage. Topics include: fountains, caricature, theatre, portraiture, creative process, art theory, chapel design, and baroque poetics.

**ARTH 417-10 SEM: NORTHERN BAROQUE ART: NETHERLANDISH PAINTINGS AND TECHNICAL ART HISTORY**

Examines how the scientific investigation of works of art helps to provide insight into the meaning and efficacy of paintings, as well as into artistic practice, the creative process, and the theory of early modern Netherlandish art.

**ARTH 617-10 SEM: NORTHERN BAROQUE ART: NETHERLANDISH PAINTINGS AND TECHNICAL ART HISTORY**

Examines how the scientific investigation of works of art helps to provide insight into the meaning and efficacy of paintings, as well as into artistic practice, the creative process, and the theory of early modern Netherlandish art.

**ARTH 420-10 SEM: AFRICAN ART: EGYPT AND NUBIA**

Explores the invention of "racial" and cultural difference in sensually charged interactions of the premier ancient states of the Nile Valley. Keywords: Race, Art, Sex, Religion, Violence, Power.

**ARTH 606-10 EARLIEST MEDIEVAL ART IN THE BRITISH ISLES (600-800 CE)**

Addresses topics and problems of 'Insular' art, including terminological and historiographical issues. Focusses particularly on metalwork, sculpture and the beginnings of manuscript illumination.

**ARTH 626-10 STDS: MEDIEVAL ART: THE MODERN CITY**

Selected topics on the modern city: for example, urban experience, light and night, the interior and street in architecture, art, cinema, and material culture.

**ARTH 627-11 STDS: HISTORY OF PHOTOGRAPHY: PHOTOGRAPHIC SETTINGS**

Reconsiders photography's global past and present, viewed through the medium's spaces of encounter: the parlor, the bookshelf, the gallery, the newsstand, the archive, and the device.

**ARTH 636-10 SEM: MODERN AMERICAN ART: TRANSATLANTIC MODERN**

Explores artistic circulations among early 20th century New York, Paris, London. Supported by a Provost's E-learning grant; videoconferencing with a Courtauld Institute seminar. Digital humanities assignments.

**ARTH 667-10 SEM: MAKING HISTORY IN THE AMERICAS: EXHIBITIONS AND CURATORIAL PRACTICE**

Offer a hands-on experience in the curation of international touring exhibitions through readings, field trips, and written assignments immersing students in the curatorial process.

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**BAMS - Black American Studies****BAMS 205-11 CONTEMPORARY AFRICAN AMERICAN ISSUES: PRISONS IN AMERICAN HISTORY**

Explores racial, political, economic, and gendered dimensions of prison spaces in American history to determine how the United States has become a world leader in the use of incarceration.

**BAMS 205-12 CONTEMPORARY AFRICAN AMERICAN ISSUES: ISSUES IN BLACK PHOTOGRAPHY**

Introduction to the critical race history of blacks as subjects, producers, and theorists of photography. Includes examination of issues, ideas, and creativity with respect to African American and Black diasporic photography from the late nineteenth century to the present day.

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**BMEG - Biomechanical Engineering****BMEG 467-014 ENGINEERING EXERCISE**

Integrates concepts across engineering, physiology, and exercise science disciplines. Divided into three core components; Defining Exercise- acute and chronic, local and systemic, and cellular to whole body; Measuring Exercise; and Designing Exercise.

**BMEG 667-13 STRUCTURAL INTERFACES IN BIOLOGY**

Facilitates an understanding of how dissimilar materials integrate and attach in biological constructs, both naturally and artificially.

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**BUAD - Business Administration****BUAD 267-10, 50, 51 SEMINAR: CAREER EXPLORATION AND PLANNING**

Designed to help students gain insight into the career planning process while researching and being exposed to different career paths. Students acquire job searching skills and become skilled in the use of career information resources.

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**CGSC - Linguistics & Cognitive Science****CGSC 451-10 TPCS: COGNITIVE SCIENCE: TRENDS IN LITERARY RESEARCH**

Covers reading acquisition and reading disorders (focus on neural basis), including cross-linguistic perspectives, and key theories of reading development and dyslexia. Reviews recent neuroimaging studies of literacy, and genetic contributions to reading and dyslexia.

**CGSC 651-10 TPCS: COGNITIVE SCIENCE: TRENDS IN LITERARY RESEARCH**

Covers reading acquisition and reading disorders (focus on neural basis), including cross-linguistic perspectives, and key theories of reading development and dyslexia. Reviews recent neuroimaging studies of literacy, and genetic contributions to reading and dyslexia.

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**CIEG - Civil & Environmental Engineer****CIEG 367-11 INTRODUCTION TO RAILROADS**

An intro to railroads, rail transportation and railroad engineering to include high speed and conventional passenger rail, freight rail, commuter rail, heavy rail transit and light rail transit. Addresses railroad operations, management, economics, and the role of railways in modern society.

**CIEG 467-10 SEM: CONCRETE MATERIALS**

Physical, chemical, mechanical properties of Portland cement concrete; practical issues of application and design of Pcc; process of designing and evaluating concrete mixes through lab testing and computer simulation. Concrete constituents; fresh concrete properties; hardened concrete properties.

**CIEG 467-12 INTRO TO BLDG INFO MODELING**

BIM in architecture/engineering/construction. Principles/benefits of BIM in software platforms, model facilitating documentation, 3D design exploration, interference checking, digital fabrication, construction industry with real world application.

**CIEG 467-16 CONSTRUCTION ENGINEERING & MANAGEMENT**

Provides students with understanding of construction industry and processes/systems necessary for successful construction project delivery. Topics include planning, cost estimating, scheduling, resource allocation, construction productivity, safety, value engineering and cost/quality control.

**CIEG 667-10 SEM: CONCRETE MATERIALS**

Physical, chemical, mechanical properties of Portland cement concrete; practical issues of application and design of Pcc; process of designing and evaluating concrete mixes through lab testing and computer simulation. Concrete constituents; fresh concrete properties; hardened concrete properties.

**CIEG 667-11 SEM: BRIDGE ANALYSIS**

Analysis of bridge structures, emphasis on highway bridges. Includes loads required for bridge analysis, influence lines and surfaces, and understanding their placement. Emphasizes application of analysis techniques.

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**CISC - Computer & Info Sciences**

### **CISC 667-10 COMMUNICATION SKILLS FOR COMPUTER SCIENCE RESEARCHERS**

Mentored experience in writing computer science research papers, proposals, and dissertations through focused writing exercises and critiques. Practice in developing and presenting elevator talks; research posters; conference and thesis defense presentations; and research interview talks.

### **CISC 850-10 CYBER ANALYTICS IN THE FINANCIAL INDUSTRY**

Studies applications of advanced analytics, i.e., machine learning, with an emphasis on cybersecurity in the financial industry. Includes what machine learning is, and what these algorithms are capable of doing. Investigates several aspects of machine learning.

### **CISC 859-11 ADV TPCS: NETWORK AND DISTRIBUTED SYSTEM SECURITY**

Explores topics in network and distributed system security such as Internet security; wireless and mobile network security; Internet of Things security; cloud computing security; and social network security. Involves reading, presenting and discussing research papers plus a term project.

### **CISC 879-11 ADV TPCS: REPRODUCIBILITY IN SOFTWARE SYSTEMS RESEARCH**

Explores notions of reproducibility in software systems research. Includes seminal papers from the literature, and a semester-long project to reproduce a previously published result in an area of their choosing.

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## **COMM - Communication**

### **COMM 200-12 TPCS: HEALTH & THE MEDIA**

Examines the relationship between media and health, especially mind/body health and emotional wellbeing. Addresses media representations of health, illness, and health care; the impact of media consumption on health and illness; and the use of media in health promotion efforts.

### **COMM 418-10 MEDIA ETHICS & ACCOUNTABILITY**

An examination of the role(s) that mass media are expected to fulfill in society, and the various ways for holding media accountable for meeting those responsibilities.

### **COMM 418-11 ADV TPCS:LOCAL NEWS**

Studies the process and production values of local news on print, broadcast and digital platforms. Examines the issues and concerns of citizens and journalists who consume and produce the news.

### **COMM 418-12 POLITICS AND ENTERTAINMENT**

Examines the relationship between politics and entertainment with a specific focus on the latest trends in "politico tainment." Examples: TV drama West Wing, and presidential candidate appearances on late night comedy programs.

### **COMM 418-13 ADV TPCS: DIGITAL TECHNOLOGY & POLITICS**

Focuses on how technology influences and is used in political campaigns, public policy debates, governance, and public opinion, as well as how politics shapes technological development, processes, and policy.

### **COMM 425-10 ADV TPCS: BROADCAST NEWS DOCUMENTARY**

Students produce a half-hour documentary, from concept, to writing, shooting and editing. Includes working a great deal on your own time. Recommended familiarity with broadcast camera techniques and digital editing software.

### **COMM 440-10 TCPS: PERSONALITY & SOCIAL INTERACTION**

Consider how personality is linked to communication styles. Explore a number of concepts and measures of personality in order to understand your own personality profile, and also problematic relationships, in an effort to develop healthy communication skills for dealing with difficult people.

### **COMM 618-10 MEDIA ETHICS & ACCOUNTABILITY**

An examination of the role(s) that mass media are expected to fulfill in society, and the various ways for holding media accountable for meeting those responsibilities.

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## **EAMC - Early American Material Culture**

### **EAMC 606-10 CITIES ON A HILL: MATERIAL CULTURE IN AMERICA'S COMMUNAL UTOPIAS**

American intentional communities established new conceptions of religious orthodoxy, sexual relations, economics, sustainable living & social structures. Includes historical scholarship, museum collections, oral history and field trips.

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## **ECON - Economics**

### **ECON 667-10 SEM: ECONOMIC ANALYSIS OF GLOBAL ENERGY MARKETS**

Economic analysis of global energy markets including supply and demand, financial analysis, external effects and regulation in selected markets. Prerequisite of ECON101 recommended.

### **ECON 867-10 SEM: ECONOMIC ANALYSIS OF GLOBAL ENERGY MARKETS**

Economic analysis of global energy markets including supply and demand, financial analysis, external effects and regulation in selected markets. Prerequisite of ECON101 recommended.

### **ECON 867-11 SEM: TOPICS IN DYNAMIC MODELING**

Computational and numeric methods to solve, simulate, and estimate models with intertemporal choice. Begins with foundational material on function representation and object-oriented programming; focuses on discrete choice models, continuous choice models, and heterogeneous agents macroeconomics. Recommended prerequisites of ECON811, ECON812 and ECON813 recommended.

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## **ELEG - Electrical and Computer Engineering**

### **ELEG 467-10 SEM: VIP:GRID-INTEGRATED VEHICLES**

VIP extends the academic design experience beyond a single semester, with students participating up to 3 yrs. Provides time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **ELEG 467-11 SEM: VIP:E-TEXTILES**

VIP extends the academic design experience beyond a single semester, with students participating up to 3 yrs. Provides time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **ELEG 467-12 SEM: VIP:CLOUD CRYPTO**

VIP extends the academic design experience beyond a single semester, with students participating up to 3 yrs. Provides time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **ELEG 467-13 SEM: VIP:HIGH-PERFORM COMPUTING**

VIP extends the academic design experience beyond a single semester, with students participating up to 3 yrs. Provides time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **ELEG 467-14 SEM: VERTICALLY INTEGRATED PROJECTS**

VIP extends the academic design experience beyond a single semester, with students participating up to 3 yrs. Provides time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams.

### **ELEG 467-15 SEM: INTEGRATED PHOTONICS**

Introduces the basic concept of the photonic integrated circuits, including a brief review of semiconductor optoelectronics, the device design for the integrated photonic structures, and its application in optical communications.

### **ELEG 667-15 SEM: INTEGRATED PHOTONICS**

Introduces the basic concept of the photonic integrated circuits, including a brief review of semiconductor optoelectronics, the device design for the integrated photonic structures, and its application in optical communications.

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#### **ENEP - Energy & Environmental Policy**

##### **ENEP 467-10 SEM: ECONOMIC EVALUATION OF SUSTAINABLE ENERGY**

Studies how to conduct economic analysis for sustainable energy, to quantify benefits and associated costs. Includes time value of money, cash flow equivalence, cost-benefit analysis, before and after tax cash flow and rate of return analysis.

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#### **ENWC - Entomology & Wildlife Ecology**

##### **ENWC 467-10 POLLINATION ECOLOGY**

Through the use of hands on field experiments and the development of educational outreach displays, students learn the basic science in the field of pollination ecology. Uses Newark farm to begin a long term database for pollinator diversity and temporal nutrition assessment.

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#### **FASH - Fashion & Apparel Studies**

##### **FASH 667-10 SEM: INTRODUCTION TO RESEARCH METHODS FOR FASHION AND APPAREL STUDIES.**

Introduction to research methods to include survey, experimental, focus group, field research and content analysis. Emphasis on research procedures, generating and testing hypothesis, designing and conducting research, data analysis and reporting research results.

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#### **FINC - Finance**

##### **FINC 467-12 SEM: SERIES 7 PREP - GENERAL SECURITIES REGISTERED REPRESENTATIVE EXAMINATION**

Examines the material that is tested on the General Securities Registered Representative Examination (Series 7 Exam). The objective for this course is to increase your probability of passing the Series 7 Exam. Taught primarily online with occasional in-class case studies.

##### **FINC 467-13 SEM: REAL ESTATE INVESTMENTS**

Focuses on the methods of valuation and evaluation of investments in real estate. Studies how to value real estate investments, present investment pitches, and measure the returns from investments in real estate. Recommended prerequisite, FINC311.

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#### **FSAN - Financial Services and Analytics**

##### **FSAN 850-10 CYBER ANALYTICS IN THE FINANCIAL INDUSTRY**

Studies applications of advanced analytics, i.e., machine learning, with an emphasis on cybersecurity in the financial industry. Includes what machine learning is, and what these algorithms are capable of doing. Investigates several aspects of machine learning.

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#### **GEOG - Geography**

##### **GEOG 473-11 TPCS: GEO APPS**

Designed to reflect on current developments in GIS industry. Covers various apps that support common GIS workflows, increase productivity and make information readily available to those who need it. Includes apps for Volunteer Geographic Information (VGI) and sharing information with the community, field crew workflows, office workforce;

configurable apps and builder applications. Uses various platforms, methods and devices to utilize the apps and simulate end user workflows.

**GEOG 673-11 TPCS: GEO APPS**

Designed to reflect on current developments in GIS industry. Covers various apps that support common GIS workflows, increase productivity and make information readily available to those who need it. Includes apps for Volunteer Geographic Information (VGI) and sharing information with the community, field crew workflows, office workforce; configurable apps and builder applications. Uses various platforms, methods and devices to utilize the apps and simulate end user workflows.

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**GEOL - Geological Sciences**

**GEOL 467-10 SEM: GEOCHEMISTRY**

Aqueous and environmental geochemistry. Study of chemical equilibria and reactions in aquatic environments with particular focus on mineral-water interactions, interfacial geochemistry, and biogeochemical processes.

**GEOL 667-10 SEM: GEOCHEMISTRY**

Aqueous and environmental geochemistry. Study of chemical equilibria and reactions in aquatic environments with particular focus on mineral-water interactions, interfacial geochemistry, and biogeochemical processes.

**GEOL 667-11 SEM: WRITING IN GEOSCIENCE**

Approaches to writing in the geosciences. Students write, edit, and prepare a paper for publication.

**GEOL 667-14 SEM: ADVANCED SEDIMENTOLOGY AND STRATIGRAPHY**

Principles of stratigraphy and their application to geological problems in earth history, groundwater systems, and hydrocarbon resources. Sedimentary facies analysis, lithostratigraphy, biostratigraphy, and chronostratigraphy with an emphasis on their integration in sequence stratigraphy.

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**GRMN - German**

**GRMN 355-10 SPEC TPCS: THE 20TH CENTURY IN FILM**

Introduction to German cultural and historical events of the 20th century as portrayed in German feature films. Course is taught in German.

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**HIST - History**

**HIST 327-10 TPCS IN JEWISH HISTORY: JEWS & FOOD**

Explores how food, kosher law, and cuisines from around the world have sustained the Jewish people for more than 3,000 years.

**HIST 339-10, 11, 80, 81 TPCS: EUROPEAN HISTORY: FROM MONARCHS TO THE MASSES: A CULTURAL HISTORY OF EUROPE FROM THE AGE OF ABSOLUTISM TO THE PERIOD BETWEEN THE WORLD WAR**

Surveys European literature, painting, and music, from the climax of absolute monarchy in the 18<sup>th</sup> century, the Baroque, to the emergence of modernism, between the world wars. Notes the connection between culture and political and economic events.

**HIST 339-12 TPCS: JEWISH LIFE BEFORE THE HOLOCAUST: EUROPEAN JEWS FROM EMANCIPATION TO EXTERMINATION, 1789-1939**

Explores the history of Jews in west and east Europe from the French Revolution to the rise of fascism. Considers the diversity of Jewish life throughout Europe; and the question of how a period that began with the integration of Jews into European society, late 18th-20th centuries.

**HIST 367-10 AUSTRALIAN HISTORY: AUSTRALIA'S ONGOING DIALOGUE BETWEEN THE PRESENT & THE PAST**

Explains the historical origins of issues, and provides critical analysis. Uses contemporary issues in Australia; race, immigration, popular culture, gender, politics, foreign policy and the environment.

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#### **HLPR - Health Promotion**

##### **HLPR 467-50 SEM: TRENDS AND BEST PRACTICES IN PUBLIC HEALTH**

Focuses on understanding the barriers and challenges faced in public health; what can be done to make public health more effective in promoting health and preventing disease. Introduces new paradigms as well as challenges to conventional wisdom and current practices.

##### **HLPR 667-50 SEM: TRENDS AND BEST PRACTICES IN PUBLIC HEALTH**

Focuses on understanding the barriers and challenges faced in public health; what can be done to make public health more effective in promoting health and preventing disease. Introduces new paradigms as well as challenges to conventional wisdom and current practices.

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#### **ITAL - Italian**

##### **ITAL 355-10 SPEC TPCS: THE MODERN ITALIAN NOVEL**

An in-depth study of some of the most important Italian novels produced during the nineteenth and the twentieth century. Explores the evolution of the Italian Novel, from the Romantic Age to the Early Twentieth Century. This course is taught in Italian.

##### **ITAL 367-70 INTERNSHIP**

120-150 hours of non-paid, graded, credit-bearing employment experience at an Italian company, non-profit, or other organization, with academic expectations such as a journal and final report. Guided oversight by JCU faculty. Requires an application & employer interview; placement not guaranteed.

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#### **JWST - Jewish Studies**

##### **JWST 327-10 TOPICS IN JEWISH HISTORY: JEWS & FOOD**

Explores how food, kosher law, and cuisines from around the world have sustained the Jewish people for more than 3,000 years.

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#### **LEAD - Leadership**

##### **LEAD 167-10 SEM: PERSONAL FINANCE**

An overview of the concepts and skills in personal financial management, including an understanding of how leaders impact the financial environment of individuals, families and communities. Includes developing financial goals, budgeting, debt, savings, retirement planning and more.

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#### **LING - Linguistics & Cognitive Science**

##### **LING 861-11 TPCS: ARTIC. & ACOUSTIC PHONETICS**

Introduction to articulatory and acoustic phonetics. Includes the basics of speech articulation, vocal tract anatomy, sound generation, the transcription of speech sounds, and computer-based acoustic analysis. Includes laboratory exercises.

##### **LING 890-10 STDS: APPROACHES TO MORPHOSYNTAX**



Provides a graduate-level introduction to different approaches to morphology and some of the important topics in morphology and the morphology-syntax interface. Recommended for MA and PhD students with at least one semester of syntax and phonology.

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#### **MALS - Master of Arts in Liberal Studies**

##### **MALS 667-10 BEYOND SIGHT: RHETORIC & RACE IN CONTEMPORARY TIMES**

Draws on approaches to rhetorical theory, critical race theory, visual culture, and new media technologies. Explores relationships between words and images. Studies magazine covers, pages and screens; figures out why (or why not) they succeed in doing what they set out to do.

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#### **MATH - Mathematical Sciences**

##### **MATH 267-11 INTERGRATED MATHEMATICS, SCIENCE AND COMPUTERS**

Strategies and methodologies to integrate the learning of mathematics science and computers. Includes interactive computer programs and writing your own programs in Python for modeling and problem solving.

##### **MATH 567-10 SEM: MATHEMATICAL TECHNIQUES IN DATA SCIENCE**

Inquiry-based approach to gaining insight through mathematically oriented applications of computational techniques to datasets. Topics vary by instructor, to be drawn from areas in data mining, machine learning, dimension and model reduction, network analysis, and data assimilation.

##### **MATH 667-10 INTRODUCTION TO MATHEMATICAL FINANCE**

Terminology of mathematical finance. Asset pricing models. Discrete and continuous models for option pricing and fixed-income products. Use of Bloomberg terminals to perform trading and pricing research and activities

##### **MATH 667-50 SEM: INTRODUCTION TO MATHEMATICAL FINANCE**

Terminology of mathematical finance. Asset pricing models. Discrete and continuous models for option pricing and fixed-income products. Use of Bloomberg terminals to perform trading and pricing research and activities. Recommended prerequisite in probability and ordinary differential equations.

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#### **MEEG - Mechanical Engineering (3140)**

##### **MEEG 167-11 TECHNICAL ANALYSIS & COMMUNICATIONS**

Covers basic tools of analysis and best practices of technical communication. Topics include basic statistics, to producing quality figures and technical reports.

##### **MEEG 467-025 PROTOTYPE TO PRODUCT**

Substantively advance select prototypes, mostly from our capstone design course, into real products. Periodic lectures & guest speakers will address topics such as fundraising, designing for mass manufacture & developing partnerships with manufacturers/distributors.

##### **MEEG 467-026 NUMERICAL METHODS & MODELING**

Linear equations, Eigenvalue problems, Nonlinear equations, Optimization, Numerical integration and differentiation, Initial value problems, Boundary value problems, Variational Formulation, Galerkin's Method, Stability and Convergence of numerical solutions, Atomistic Methods, Homogenization.

##### **MEEG 867-15 SEM: OPTIMAL STATE ESTIMATION**

Basic probability theory, stochastic processes. Gauss-Markov model. Batch/recursive least squares estimation. Filtering of linear/nonlinear systems. Continuous-time Kalman-Bucy filter. Unscented Kalman filter, particle filters. Applications.

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#### **MSEG - Materials Science & Engineering**

**MSEG 667-10 SEM: THEORY, EXPERIMENT AND APPLICATIONS IN VIBRATIONAL SPECTROSCOPY**

Covers the fundamentals of vibrational spectroscopy including normal modes of vibration and conditions for scattering and absorption. Experimental methods discussed includes: FT-IR, Planar Array IR (PA-IR), 2D IR, AFM-IR, RAMAN AND FT Raman spectroscopy.

**MSEG 667-12 SEM: BIOELECTRONIC MATERIALS AND DEVICES**

Considers Bioelectronic devices used to treat a number of diseases and disorders including hearing loss, paralysis, and Parkinson's disease. Discusses the materials used to make these devices, and the design and performance of the devices themselves.

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**MSST - Musuem Studies****MSST 367-12 MUSEUM EXHIBITIONS AND COLLECTIONS**

Involves object research; label & text writing; proper care, handling, preparation of objects for exhibition; installation & de-installation of exhibitions; evaluations & critiquing techniques; and writing exhibition prospectuses & proposals. Students work individually and in teams.

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**NSCI – Neuroscience****NSCI 467-10 SPATIAL COGNITION**

Focusses on brain mechanisms that enable acquisition of information about the environment and the use of that Information in spatial navigation for both animals and humans.

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**NTDT - Nutrition & Dietetics****NTDT 267-10 SEM: CULINARY NUTRITION**

Laboratory experience in application and translation of nutrition recommendations into food preparation. Includes basic preparation and recipe modifications for: therapeutic diets for chronic medical conditions; food allergy, intolerance and strict preferences; and food insecurity.

**NTDT 367-10 SEM: SOCIAL MEDIA & NUTRITION**

Studies technology designed to enhance the efficiency and accuracy of practice in nutrition professions. Investigates development, application, and evaluation of social networking tools and other emerging technologies, related to nutrition and education.

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**PHYS - Physics & Astronomy****PHYS 667-11 SEM: LABORATORY INSTRUMENTATION AND TECHNIQUE**

Electronic measurements and instrumentation with emphasis on applications in science. Amplification, noise, low-level signal recovery, lock-in amplifiers, digital signal averaging, frequency and time measurements, transducers, bridges, interfacing to laboratory computers, automation of experiments.

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**PLSC - Plant & Soil Science****PLSC 267-10 SEM: WETLANDS**

Introduces the ecology of wetlands. Includes identification of wetlands, wetlands types, hydrology, soils, plant communities and wildlife. Includes lectures and field activities. Recommended prerequisites; CHEM101 or 103 or 105.

**PLSC 267-16 SEM: HUMANS & ENVIRON SUSTAINABILIT**

Introduces the major resources that humans need; like food, water, energy, land, & materials. Explores ways in which resources are utilized, & provides a framework for future resource utilization.

**PLSC 467-11 SEM: ENVIRON FORENSICS & SOCIETY**

Principles and applications of environmental forensic sciences, applies chemical, stable, and radioisotopes as tools to address a variety of contemporary forensic problems. Includes field visits, data collection, analyses and forensic report preparation consistent with environmental regulations.

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**POSC - Political Science**

**POSC 867-10 FRONTIERS IN CRITICAL INTERNATIONAL RELATIONS THEORY**

Upper-level grad course recommended for students who have taken the intro IR theory seminar (POSC830). Focuses on the current literature/debates in critical IR: post-structuralism, post-colonial IR, feminist IR, critical constructivism, etc. Produces a publishable term paper.

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**PSYC - Psychological & Brain Sciences**

**PSYC 467-10 SEM: PSYCHOLOGY OF DIVERSITY**

Summarizes objectives of diversity in many contexts. Explores how this objective is achieved, and the psychological processes involved.

**PSYC 467-11 SEM: FORENSIC PSYCHOLOGY**

Explores the mutual relation between law and psychology. Focuses on cases and situations illustrating these relations in law enforcement, criminal prosecutions, family law, sexual deviancy, and other social issues involving legal processes.

**PSYC 667-10 SEM: COGNITIVE NEUROIMAGING**

Explores the use of neuroimaging methods (especially functional magnetic resonance imaging, or fMRI) to understand the neural underpinnings of cognition. Surveys cutting-edge methods in neuroimaging and current findings from neuroimaging studies of perception, memory, and decision-making,

**PSYC 867-10 SEM: DEVELOPMENTAL PSYCHOPATHOLOGY**

Adopts a developmental perspective, to understand biological and interpersonal vulnerabilities for psychopathology and problems in adaptation, across the lifespan. Includes longitudinal designs and contextual models that are used in developmental psychopathology research.

**PSYC 867-11 SEM: INDIVIDUAL DIFFERENCES IN PROSOCIAL BEHAVIOR**

Examines stable individual differences related to cooperative behavior in socially interdependent behavior, including: fundamental personality dimensions, social value orientation, generalized trust, social mindfulness, concern with future consequences, and preference for social control.

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**SOCI – Sociology**

**SOCI 367-70 SOCIOLOGY OF SOUTHERN ITALY**

Examination of the social history and contemporary realities of Southern Italy, focusing on the many paradoxes which continue to characterize the area, such as the influence of history and tradition alongside the often rapid social changes which have occurred since World War II.

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**SPAN - Spanish**

**SPAN 367-70 SEM: SPEAKING & WRITING SKILLS 5&6**

Fundamental linguistic support. Enables student to understand and express in a variety of situations which may be unfamiliar, and which require exchanging informational and personal opinions using complex linguistic structures. Course is required for all students in the Lang. and Culture Program.

**SPAN 455-80 MASTERPIECES OF SPAN LITERATURE & FILM**

Explores masterpieces of contemporary Spanish fiction and film. Considers why certain works have entered the cultural canon; what innovations defined them, and what reactions they elicit today.

**SPAN 467-70 SEM: ENGLISH-SPANISH TRANSLATION I**

Deals with the new approaches to language learning, that view the activities of translation and interpreting as a tool for the development of communicative ability and mediation skills.

**SPAN 467-74 SEM: SPANISH GRAMMAR (SUPERIOR LEV)**

Includes the main points of those remaining difficulties which a student may encounter in the latter part of an advanced learning phase and the best way to solve them, within a pragmatic tone.

**SPAN 467-75 SEM: SPEAKING & WRITING SKILLS 7&8**

Fundamental linguistic support. Enables student to understand and express in a variety of situations which may be unfamiliar, and which require exchanging informational and personal opinions using complex linguistic structures.

**SPAN 655-10 MASTERPIECES OF SPAN LIT, FILM**

Explores masterpieces of contemporary Spanish fiction and film. Considers why certain works have entered the cultural canon; what innovations defined them, and what reactions they elicit today.

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**UAPP - Urban Affairs & Public Policy**

**UAPP 441-10 TCPS: RESPONSIBILITY & SOCIAL IMPACT**

Designed for a diverse audience. Explores the role of public, nonprofit and for-profit sectors in the betterment of society. Affords students the opportunity to examine fundamental concepts, including social impact investment, social entrepreneurship.

**UAPP 641-10 TCPS: RESPONSIBILITY & SOCIAL IMPACT**

Designed for a diverse audience. Explores the role of public, nonprofit and for-profit sectors in the betterment of society. Affords students the opportunity to examine fundamental concepts, including social impact investment, social entrepreneurship.

**UAPP 467-17 TOPICS IN PUBLIC HEALTH POLICY**

Examines a range of current topics in public health policy, such as the US healthcare system, Medicaid, safety net providers, social determinants of health, health inequities, women's health, disabilities, and public health/health services research methods. Seminar format, team taught.

**UAPP 667-15 SEM: GRANT PROPOSAL WRITING TUTORIAL**

Discusses the components of a successful grant proposal. Each student drafts a full grant proposal over the semester. Course meetings devoted to critique, discussion, and revision of various parts of the proposal.

**UAPP 667-16 SEM: CAPSTONE PROJECT**

Working in teams, students will act as consultants and complete a real-world project for a client in the public or not-for-profit sector. With permission of the Director of the MPA program, students may opt into an individual project if they can identify their own client.

**UAPP 667-17 TOPICS IN PUBLIC HEALTH POLICY**

Examines a range of current topics in public health policy, such as the US healthcare system, Medicaid, safety net providers, social determinants of health, health inequities, women's health, disabilities, and public health/health services research methods. Seminar format, team taught.

